MINUTES OF PROCEEDINGS

OF THE

ROYAL SOCIETY OF CANADA

1957

THIRD SERIES, VOLUME LI

PROCÈS-VERBAUX

DE LA

SOCIÉTÉ ROYALE DU CANADA

1957

TROISIÈME SÉRIE, TOME LI

OTTAWA
ROYAL SOCIETY OF CANADA

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1953—Leechman, J. D., M.A., Ph.D., 3807 Seventh St. S.W., Calgary, Alta.
1946—Lodge, R.C., M.A., 775 Dade Boulevard, Miami Beach 39, Florida, U.S.A.
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1955—PICKUP, ERIC, B.Sc., Ph.D., Research Officer, Physics Division, National Research Council, Ottawa, Ont.

1942—PIDGEON, L. M., M.B.E., M.Sc., Ph.D., Head, Department of Metallurgical Engineering, University of Toronto, Toronto, Ont.

1955—PRINGLE, ROBERT, B.Sc., Ph.D., 91 Ravelston Dykes, Edinburgh, Scotland.

1949—PUDDINGTON, I. E., M.Sc., Ph.D., Director, Division of Applied Chemistry, National Research Council, Ottawa, Ont.

1949—PURVES, C. B., B.Sc., Ph.D., D.Sc., E. B. Eddy Professor of Industrial and Cellulose Chemistry, McGill University, Montreal, P.Q.

1954—RISI, JOSEPH, L.Sc., D.Sc., Professor of Organic Chemistry, Laval University, Quebec, P.Q.

1944—ROBINSON, GILBERT DE B., M.B.E., Ph.D., Professor, Department of Mathematics, University of Toronto, Toronto, Ont.

1956—Robson, J. M., M.A., Branch Head, Nuclear Physics I, Atomic Energy of Canada Limited, Chalk River, Ont.

1936—Rose, D. C., O.B.E., M.Sc., Ph.D., Principal Research Officer, Division of Physics, National Research Council, Ottawa, Ont.

1947—Sandin, R. B., M.Sc., Ph.D., University of Alberta, Edmonton, Alta.

1941—Sargent, B. W., M.B.E., M.A., Ph.D., R. Samuel McLaughlin Research Professor of Physics and Head of Department, Queen's University, Kingston, Ont.

1952—Scherk, Peter, Ph.D., Associate Professor, Department of Mathematics, University of Saskatchewan, Saskatoon, Sask.

1951—Schneider, W. G., M.Sc., Ph.D., Senior Research Chemist, National Research Council, Ottawa, Ont.

1923—Shaw, A. Norman, M.A., D.Sc., LL.D., 2125 Sunset Rd., Montreal 16, P.Q.

1935—Shrum, G. M., O.B.E., M.A., Ph.D., Professor and Head, Department of Physics, University of British Columbia, Vancouver, B.C.

1940—Smith, H. Grayson, M.B.E., M.A., Ph.D., Head, Department of Physics, University of Alberta, Edmonton, Alta.

1943—Spinks, J. W. T., M.B.E., B.Sc., Ph.D., Head, Department of Chemistry, and Dean of Graduate Studies, University of Saskatchewan, Saskatoon, Sask.

1934—Steacie, E. W. R., O.B.E., M.Sc., Ph.D., D.Sc., LL.D., D. de l'U., F.R.S., President, National Research Council, Ottawa, Ont. (Ex-President.)

1943—Thode, H. G., M.B.E., M.Sc., Ph.D., D.Sc., F.R.S., Principal, Hamilton College, McMaster University, Hamilton, Ont.

1935—Thomson, Andrew, O.B.E., M.A., 36 Russell Hill Rd., Toronto, Ont.

1926—Thorvaldson, T., Commander, Order of the Falcon (Iceland), M.A., Ph.D., D.Sc., LL.D., University of Saskatchewan, Saskatoon, Sask.

1948—Volkoff, G. M., M.B.E., M.A., Ph.D., D.Sc., Professor of Physics, University of British Columbia, Vancouver, B.C.

1945—Walker, O. J., A.M., Ph.D., Head, Department of Chemistry, Director, School of Graduate Studies, University of Alberta, Edmonton, Alta.

1957—Ward, Arthur G., M.A., Research Officer, Atomic Energy of Canada Ltd., Chalk River, Ont.

1937—Watson, W. H., M.A., Ph.D., Professor and Head, Department of Physics, and Director, Computation Centre, University of Toronto, Toronto, Ont.

1952—Welsh, H. L., M.A., Ph.D., Professor of Physics, University of Toronto, Toronto, Ont.

1955—Wetmore, F. E. W., M.A., Ph.D., Professor of Chemistry, University of Toronto, Toronto, Ont.

1957—Wiesner, K., D.Sc., Professor of Organic Chemistry, University of New Brunswick, Fredericton, N.B.

1935—Williams, W. L. G., M.A., Ph.D., D.ès-Sc., Chemistry Building, McGill University, Montreal, P.Q.

1946—Winkler, C. A., O.B.E., M.Sc., D.Phil., Professor of Chemistry, McGill University, Montreal, P.Q.

1950—Woonton, G. A., M.A., MacDonald Professor and Chairman, Department of Physics, Director Eaton Electronics, Research Laboratory, McGill University, Montreal, P.Q.

1956—Wright, G. F., B.Sc., Ph.D., Professor, Department of Chemistry, University of Toronto, Toronto, Ont.

1954—Wright, K. O., M.A., Ph.D., Astrophysicist, Dominion Astrophysical Observatory, Royal Oak, B.C.

1957—Wu, Ta-You, M.A., Ph.D., Senior Research Officer and Head of Theoretical Physics Group, National Research Council, Ottawa, Ont.

1951—Wyman, Max, B.Sc., Ph.D., Associate Professor of Mathematics, University of Alberta, Edmonton, Alta.

1956—Zassenhaus, H. J., M.A., Ph.D., Professor, Department of Mathematics, McGill University, Montreal, P.Q.

SECTION IV—GEOLOGICAL AND ALLIED SCIENCES

Retired Members

1920—BANCROFT, J. AUSTEN, Ph.D., D.Sc., Consulting Geologist, Anglo American Corporation of South Africa, Johannesburg, South Africa.
1928—BOYD, W. H., B.A.Sc., 69 Dunvegan Rd., Toronto, Ont.
1928—DELURY, J. S., Ph.D., P.O. Box 22, Uxbridge, Ont.
1920—GRAHAM, R. P. D., D.Sc., 775 Davaar Ave., Outremont, P.Q.
1930—HANSON, GEORGE, M.A., Ph.D., 27 Nolan Street, Ottawa, Ont.
1920—KNIGHT, C. W., B.Sc., Consulting Geologist, 1545 Glenburnie Road, Port Credit, Ont.
1928—MACKAY, B. R., B.Sc., Ph.D., 193 Carling Ave., Ottawa, Ont.
1926—MALCOLM, WYATT, M.A., 376 Hinton Ave., Ottawa, Ont.
1932—WRIGHT, W. J., M.A., Ph.D., LL.D., 117 Church St., Fredericton, N.B.

Active Members

1925—ALCOCK, F. J., Ph.D., Chief Curator, National Museum of Canada, Ottawa, Ont.
1944—AMBROSE, J. W., Ph.D., Professor of Geology, Queen's University, Kingston, Ont.
1950—ARMSTRONG, J. E., M.A.Sc., Ph.D., Geologist, Geological Survey of Canada, 739 W. Hastings St., Vancouver, B.C.
1957—ARMSTRONG, H. S., M.A., Ph.D., Professor of Geology, Dean of Arts and Science, McMaster University, Hamilton, Ont.
1950—AUGER, P. E., B.Sc., Ph.D., Professor of Geology, Laval University, Quebec, P.Q.
1931—BAKER, M. B., B.Sc., LL.D., Curator of the Geological Museum, Queen's University, Kingston, Ont.
1925—BELL, W. A., B.Sc., Ph.D., 82 Terrace Street, New Glasgow, N.S.
1951—BERRY, L. G., M.A., Ph.D., Associate Professor of Mineralogy, Queen's University, Kingston, Ont.
1940—BOSTOCK, H. S., M.Sc., Ph.D., Senior Geologist, Geological Survey of Canada, Ottawa, Ont.
1957—BOYLE, R. W., M.A.Sc., Ph.D., Geologist, Geological Survey of Canada, Ottawa, Ont.
1951—BROWNELL, G. M., M.Sc., Ph.D., Professor and Chairman, Department of Geology and Mineralogy, University of Manitoba, Winnipeg, Man.
1955—BYERS, A. R., M.Sc., Ph.D., Associate Professor, Department of Geology, University of Saskatchewan, Saskatoon, Sask.
1948—CALEY, J. F., M.Sc., M.A., Ph.D., Senior Geologist, Geological Survey of Canada, Ottawa, Ont.
1953—CAMPBELL, NEIL, B.Sc., Ph.D., District Geologist, Consolidated Mining and Smelting Company, Trail, B.C.
1918—CAMSELL, CHARLES, C.M.G., LL.D., Commissioner, Federal District Commission, Ottawa, Ont. (Ex-President.)
1933—CLARK, T. H., A.M., Ph.D., Logan Professor, Department of Geological Sciences, McGill University, Montreal, P.Q.
1943—DENIS, B. T., B.Sc., Ph.D., Bureau of Mines, Quebec, P.Q.
1946—DERRY, D. R., M.A., Ph.D., Vice-President, Rio Tinto Mining Company of Canada Ltd., 335 Bay St., Toronto, Ont.
1926—DOLMAGE, VICTOR, Ph.D., Consulting Geologist, 355 Burrard St., Vancouver, B.C.
1944—DOUGLAS, G. V., M.C., M.Sc., Carnegie Professor of Geology, Dalhousie University, Halifax, N.S.
1950—EDMUNDS, F. H., M.Sc., Professor of Geology, University of Saskatchewan, Saskatoon, Sask.
1952—FAESSLER, CARL, Ph.D., Professor of Mineralogy, Laval University, Quebec, P.Q.

1956—Folinsbee, R. E., M.Sc., Ph.D., Professor and Chairman, Department of Geology, University of Alberta, Edmonton, Alta.
1953—Fortier, Y. O., M.Sc., Ph.D., Geologist, Geological Survey of Canada, Ottawa, Ont.
1950—Fraser, H. J., M.Sc., Ph.D., President, Falconbridge Nickel Mines, Ltd., 44 King St., West, Toronto, Ont. (Life Member.)
1955—Frebold, Hans, D.Phil., Head, Section of Stratigraphic Palaeontology, Geological Survey of Canada, Ottawa, Ont.
1942—Fritz, Madeleine A., M.A., Ph.D., Professor of Palaeontology, University of Toronto, Toronto, Ont.
1947—Furnival, G. M., M.A., Ph.D., 24 Caperton St., Piedmont 11, California, U.S.A.
1938—Gill, J. E., B.Sc., Ph.D., Professor of Geology, McGill University, Montreal, P.Q.
1935—Gunning, H. C., B.A.Sc., S.M., Ph.D., Dean, Applied Science, Head, Geology and Geography, University of British Columbia, Vancouver, B.C.
1955—Gussow, W. C., M.Sc., Ph.D., Union Oil Co., 709 8th Ave. W., Calgary, Alta.
1957—Hage, Conrad O., B.Sc., M.A., Chief Geologist, Dome Exploration (Western) Ltd., Calgary, Alta.
1952—Harrison, J. M., M.A., Ph.D., Geologist, Geological Survey of Canada, Ottawa, Ont.
1934—Hawley, J. E., M.A., Ph.D., Miller Memorial Research Professor and Chairman, Graduate Studies, Department of Geological Sciences, Queen's University, Kingston, Ont.
1947—Henderson, J. F., M.Sc., Ph.D., Geologist, Geological Survey of Canada, Ottawa, Ont.
1956—Hewitt, D.F., M.S., Ph.D., Geologist, Ontario Department of Mines, Toronto, Ont.
1929—Hume, G. S., O.B.E., Ph.D., Westcoast Transmission Co. Ltd., Pacific Bldg., 9th Ave., Calgary, Alberta (Ex-President.)
1940—Hurst, M. E., M.A., Ph.D., Provincial Geologist, Ontario Department of Mines, Toronto, Ont.
1954—James, W. F., M.Sc., Ph.D., D.Sc., Consulting Geologist, Suite 1505, 320 Bay St., Toronto, Ont.
1919—Johnston, R. A. A., B.A., 105 Old Forest Hill Rd., Toronto 10, Ont.
1943—Jolliffe, A. W., M.A., Ph.D., Queen's University, Kingston, Ont. (Life Member.)
1941—Jones, I. W., B.Sc., Ph.D., Bureau of Mines, Quebec, P.Q.
1948—Kindle, E. D., M.A., Ph.D., Geologist, Geological Survey of Canada, Ottawa, Ont.
1951—Lang, A. H., M.A., Ph.D., Chief, Mineral Deposits Division, Geological Survey of Canada, Ottawa, Ont.
1940—Langford, G. B., B.A.Sc., Ph.D., Head, Department of Geological Sciences, University of Toronto, Toronto, Ont.
1949—Laverdière, l'abbé J. W., L.Sc., D.Sc., Docteur en Droit, Professor of Geology, Laval University, Quebec, P.Q.
1956—Legget, R. F., B.Eng., M.Eng., Director, Division of Building Research, National Research Council, Ottawa, Ont.
1949—Lord, C. S., M.A.Sc., Ph.D., Chief Geologist, Geological Survey of Canada, Ottawa, Ont.
1952—MacKenzie, G. S., M.A., Ph.D., University of New Brunswick, Fredericton, N.B.
1957—Mathews, W. H., M.A.Sc., Ph.D., Associate Professor, Division of Geology, University of British Columbia, Vancouver, B.C.
1933—Mawdsley, J. B., M.B.E., B.Sc., Ph.D., University of Saskatchewan, Saskatoon, Sask.
1947—McGerrigle, H. W., Ph.D., Geologist, Quebec Department of Mines, Quebec, P.Q.
1927—McLearn, F. H., B.E., Ph.D., 817 Ivanhoe Ave., Britannia Heights (Ottawa), Ont.
1924—Moore, E. S., M.A., Ph.D., LL.D., Department of Geological Sciences, University of Toronto, Toronto, Ont. (Ex-President.)

1937—NORMAN, G. W. H., B.A.Sc., Ph.D., Newmont Exploration Ltd., P.O. Box 99, Montrose, Colorado, U.S.A.
1945—OKULITCH, V. J., M.A.Sc., Ph.D., Professor and Chairman, Division of Geology, University of British Columbia, Vancouver, B.C.
1925—O'NEILL, J. J., M.Sc., Ph.D., D.Sc., 3246 The Boulevard, Westmount, P.Q. (Ex-President.)
1937—OSBORNE, F. F., M.A.Sc., Ph.D., Professor of Petrology, Laval University, Quebec, P.Q.
1927—POITEVIN, EUGÈNE, C.E., B.A.Sc., D.Sc., 355 Wilbrod Street, Ottawa, Ont.
1946—RICE, H. M. A., M.A.Sc., Ph.D., Chief Geological Editor, Geological Survey of Canada, Ottawa, Ont.
1956—RIDDELL, J. E., B.Eng., M.Sc., Ph.D., Associate Professor, Department of Geological Sciences, McGill University, Montreal, P.Q.
1936—RICKABY, H. C., M.A., Deputy Minister of Mines, Parliament Bldgs., Toronto, Ont.
1954—ROBINSON, S. C., M.A.Sc., Ph.D., Geologist, Geological Survey of Canada, Ottawa, Ont.
1954—ROLIFF, W. A., B.Sc., Manager, Eastern Division, Producing Dept., Imperial Oil Ltd., 111 St. Clair Ave. West, Toronto, Ont.
1936—RUSSELL, L. S., M.A., Ph.D., Chief Zoologist, National Museum of Canada, Ottawa, Ont.
1954—SATTERLY, JACK, M.A., Ph.D., Geologist, Ontario Department of Mines, Toronto, Ont.
1938—SLIPPER, S. E., B.Sc., 13051, 9th Ave., N.W., Seattle, Wash., U.S.A.
1955—SPROULE, J. C., M.A., Ph.D., J. C. Sproule and Associates, Geological Consultants, 901-8th Ave. West, Calgary, Alta.
1949—STERNBERG, C. M., 169 Holmwood Ave., Ottawa, Ont.
1949—STEVENSON, J. S., B.A.Sc., Ph.D., Associate Professor of Mineralogy, McGill University, Montreal, P.Q.
1936—STOCKWELL, C. H., B.A.Sc., Ph.D., Chief, Precambrian Division, Geological Survey of Canada, Ottawa, Ont.
1939—SWANSON, C. O., M.A.Sc., Ph.D., Chief Geologist, Consolidated Mining & Smelting Co., Ltd., Trail, B.C.
1927—TANTON, T. L., M.A., Ph.D., Consulting Geologist, 9 Grosvenor Ave., Ottawa, Ont.
1945—THOMSON, J. E., M.A., Ph.D., Assistant Provincial Geologist, Department of Mines, Toronto, Ont.
1910—TYRRELL, J. B., M.A., B.Sc., LL.D., 14 Walmer Rd., Toronto, Ont. (Life Member.)
1937—WALKER, J. F., B.A.Sc., Ph.D., Deputy Minister of Mines, Province of British Columbia, Victoria, B.C.
1945—WARREN, H. V., B.Sc., D.Phil., Professor, Department of Geology and Geography, University of British Columbia, Vancouver, B.C.
1931—WARREN, P. S., Ph.D., A.R.C.S., Head of Department and Professor of Geology, University of Alberta, Edmonton, Alta.
1953—WATSON, J. W., M.A., Ph.D., Professor of Geography, Edinburgh University, Edinburgh, Scotland.
1953—WEEKS, L. J., B.Sc., M.A., Ph.D., Geologist, Geological Survey of Canada, Ottawa, Ont.
1939—WICKENDEN, R. T. D., Ph.B., M.A., Ph.D., 406 Customs Bldg., Calgary, Alta.
1926—WILLIAMS, M. Y., B.Sc., Ph.D., Professor Emeritus of Geology, University of British Columbia, Vancouver, B.C.
1938—WILSON, ALICE E., M.B.E., Ph.D., 328 McLeod St., Ottawa, Ont.
1948—WILSON, J. TUZO, O.B.E., Legion of Merit (USA) M.A., Ph.D., Professor of Geophysics, University of Toronto, Toronto, Ont.
1924—WILSON, M. E., Ph.D., 22 Monkland Ave., Ottawa, Ont.
1932—WRIGHT, J. F., Ph.D., Geologist, Geological Survey of Canada, Ottawa, Ont.

Section V.—BIOLOGICAL SCIENCES

Retired Members

1924—Boyd, William, M.D., LL.D., D.Sc., 40 Arjay Crescent, Willowdale, Ont.
1936—Brittain, W. H., B.S.A., M.S., Ph.D., D.Sc., Curator, Morgan Arboretum, Dept. of Woodlot Management, Macdonald College, P.Q.
1919—Cameron, John, M.S., D.Sc., M.R.C.S., 63 Grove Road, Bournemouth, England.
1946—Craigie, James, O.B.E., M.B., Ph.D., D.P.H., F.R.S., Imperial Cancer Research Fund, Burtonhole Lane, The Ridgeway, Mill Hill, N.W. 7, London, England.
1921—Faull, J. H., Ph.D., 72 Fresh Pond Lane, Cambridge 38, Mass., U.S.A.
1922—Gibson, Arthur, LL.D., 183 King St. E., Brockville, Ont.
1931—Gussow, H. T., LL.D., F.R.M.S., Hon. F.R.H.S., 2605 Killarney Rd., Victoria, B.C.
1916—Hunter, Andrew, C.B.E., M.A., B.Sc., M.B., Ch.B., F.R.S.E., 2 Sultan St., Toronto, Ont.
1943—Kirk, L. E., M.S.A., Ph.D., Food and Agricultural Organization of U.N., Rome, Italy.
1911—Leathes, J. B., B.Ch., Sheffield, England.
1932—Macallum, A. B., M.B., M.D., Ph.D., R.R. 3, Lunenberg, N.S.
1937—Marrian, G. F., D.Sc., F.R.I.C., F.R.S., Department of Medical Chemistry, University of Edinburgh, Edinburgh, Scotland.
1937—McDunnough, J. H., M.A., Ph.D., Nova Scotia Museum of Science, Halifax, N.S.
1926—Meakins, J. C., C.B.E., M.D., C.M., M.D., LL.D., F.A.C.P., F.R.C.P.(C), F.R.S.E., 3640 University St., Montreal, P.Q.
1922—Miller, James, M.D., D.S.C., F.R.C.P.E., F.R.C.P.(C), Painswick House, near Strough, Gloucestershire, England.
1922—Miller, F. R., M.A., M.B., M.D., F.R.C.P.(C), F.R.S., 280 Carlton St., Toronto, Ont.
1930—Newton, Robert, M.C., B.S.A., M.Sc., Ph.D., 1972 Robson St., Vancouver 8, B.C.
1922—O'Donoghue, C. H., D.Sc., F.R.S.E., University of Reading, Reading, England.
1915—Walker, E. M., M.B., 120 Cheltenham Ave., Toronto, Ont.

Active Members

1944—Anderson, J. A., M.Sc., Ph.D., Chief Chemist, Board of Grain Commissioners for Canada, Winnipeg, Man.
1939—Anderson, R. M., B.Ph., Ph.D., 58, The Driveway, Ottawa, Ont.
1937—Bailey, D. L., M.S., Ph.D., Professor of Botany, University of Toronto, Toronto, Ont.
1952—Bannan, M. W., Ph.D., Associate Professor of Botany, University of Toronto, Toronto, Ont.
1936—Berrill, N. J., Ph.D., D.Sc., F.R.S., Strathcona Professor of Zoology, McGill University, Montreal, P.Q.
1956—Bernard, Richard, M.Sc., Ph.D., Professeur titulaire de physiologie animale, département de biologie, Université Laval, Québec, P.Q.
1931—Best, C. H., C.B.E., M.A., M.D., D.Sc., LL.D., F.R.S., Professor and Head of Department of Physiology and Director of Banting & Best Department of Medical Research, Charles H. Best Institute, University of Toronto, Toronto, Ont.
1956—Black, E. C., M.B.E., M.A., Ph.D., Associate Professor, Department of Physiology, University of British Columbia, Vancouver, B.C.
1939—Browne, J. S. L., B.Sc., M.D., C.M., Ph.D., LL.D., Director, McGill University Clinic, Professor and Chairman, Dept. of Investigative Medicine, McGill University, Montreal, P.Q.
1952—Burton, A. C., M.B.E., B.Sc., M.A., Ph.D., Professor of Biophysics, University of Western Ontario, London, Ont.

1957—Butler, G. C., B.A., Ph.D., Professor, Department of Biochemistry, University of Toronto, Toronto, Ont.

1939—Cameron, T. W. M., T.D., M.A., Ph.D., D.Sc., M.R.C.V.S., Professor and Chairman, Department of Parasitology, McGill University, Director, Institute of Parasitology, Macdonald College, P.Q.

1933—Campbell, W. R., M.A., M.B., M.D., F.R.C.P. (C), Medical Arts Bldg., Toronto, Ont.

1955—Cantero, Antonio, M.D., C.M., Director of Research Notre Dame Hospital, Montreal Cancer Institute, Montreal, P.Q.

1925—Clemens, W. A., M.A., Ph.D., Director, Institutes of Oceanography and Fisheries, University of British Columbia, Vancouver, B.C.

1954—Collier, H. B., M.A., Ph.D., Professor and Head, Department of Biochemistry, University of Alberta, Edmonton, Alta.

1925—Collip, J. B., C.B.E., Ph.D., M.D., D.Sc., LL.D., F.R.S., Dean of Medicine, University of Western Ontario, London, Ont. (Ex-President.)

1944—Cone, W. V., B.S., M.D., Professor of Neurosurgery, McGill University, Neurosurgeon-in-Chief, Royal Victoria Hospital and Montreal Neurological Institute, Montreal, P.Q.

1943—Cook, W. H., O.B.E., M.Sc., Ph.D., LL.D., Director, Division of Applied Biology, National Research Council, Ottawa, Ont.

1957—Cormack, R. G. H., M.A., Ph.D., Professor of Botany, University of Alberta, Edmonton, Alta.

1946—Cowan, Ian McT., Ph.D., Professor and Head, Department of Zoology, University of British Columbia, Vancouver, B.C.

1935—Craigie, E. Horne, Ph.D., Professor of Comparative Anatomy and Neurology, Department of Zoology, University of Toronto, Toronto, Ont.

1936—Craigie, J. H., M.S., Ph.D., D.Sc., LL.D., F.R.S., Principal Plant Pathologist, Science Service, Department of Agriculture, Ottawa, Ont.

1945—Crampton, E. W., M.Sc., Ph.D., Professor and Chairman, Department of Nutrition, Professor of Animal Husbandry, Macdonald College, P.Q.

1949—Dansereau, Pierre, B.A., B.Sc.Agr., D.Sc., Institut de botanique, Université de Montréal, 4101 est, rue Sherbrooke, Montréal 36, P.Q.

1953—Dauphinee, J. A., O.B.E., M.A., Ph.D., M.D., Professor of Pathological Chemistry and Head of the Department, University of Toronto, Toronto, Ont.

1952—Daviault, Lionel, L.Sc.A., M.Sc., D.Sc., Officer in Charge, Laboratory of Forest Zoology, Science Service, Canadian Department of Agriculture, Quebec, P.Q.

1947—Dolman, C. E., M.B., B.S., D.P.H., Ph.D., Professor and Head, Department of Bacteriology & Immunology, University of British Columbia, Vancouver, B.C.

1938—Drayton, F. L., B.S.A., Ph.D., Associate Chief, Botany and Plant Pathology Division, Science Service, Department of Agriculture, Ottawa, Ont.

1951—Dugal, L.-Paul, O.B.E., M.A., Ph.D., Département de biologie, Université d'Ottawa, Ottawa, Ont.

1954—Dunbar, M. J., M.A., Ph.D., Professor emeritus of Zoology, McGill University, Montreal, P.Q.

1938—Dymond, J. R., O.B.E., M.A., D.Sc., Professor emeritus of Zoology, University of Toronto, Toronto, Ont.

1952—Eagles, Blythe, M.A., Ph.D., Dean, Faculty of Agriculture, and Head, Department of Dairying, University of British Columbia, Vancouver, B.C.

1941—Ettinger, G. H., M.B.E., M.D., C.M., Dean, Faculty of Medicine, Queen's University, Kingston, Ont.

1948—Ferguson, J. K. W., M.B.E., M.A., M.D., Connaught Medical Research Laboratories, University of Toronto, Toronto, Ont.

1949—Fisher, K. C., M.A., Ph.D., Dept. of Zoology, University of Toronto, Toronto, Ont.

1939—Foerster, R. E., M.A., Ph.D., Principal Scientist, Fisheries Research Board of Canada, Pacific Biological Station, Nanaimo, B.C.

1949—Frappier, Armand, O.B.E., M.D., L.ès Sc., Officier d'Académie (avec palmes), professeur de bactériologie, directeur de l'École d'Hygiène de l'Université de Montréal, Montréal, P.Q.

1948—Fry, F. E. J., M.B.E., M.A., Ph.D., Associate Professor of Limnology, Department of Zoology, University of Toronto, Toronto, Ont.

1952—Gibbard, James, B.S.A., S.M., Director, Laboratory of Hygiene, Department of National Health & Welfare, Ottawa, Ont.

1939—Gibbs, R. D., M.Sc., Ph.D., F.L.S., Professor of Botany, McGill University, Montreal 2, P.Q.

1955—Gibbons, N. E., M.B.E., M.A., Ph.D., Head, Food Microbiology Section, Division of Applied Biology, National Research Council, Ottawa, Ont.

1941—Goulden, C. H., M.S.A., Ph.D., LL.D., Director, Experimental Farms Service, Department of Agriculture, Ottawa, Ont.

1948—Grace, N. H., M.B.E., M.A., Ph.D., Director, Research Council of Alberta, Edmonton, Alta.

1938—Graham, D. A., C.B.E., M.D., D.Sc., LL.D., F.R.C.P. (C) (London), 343 Lytton Boulevard, Toronto, Ont.

1951—Groves, J. W., M.A., Ph.D., Head, Mycology Unit, Science Service, Department of Agriculture, Ottawa, Ont.

1957—Haist, R. E., M.D., M.A., Ph.D., Professor of Physiology, University of Toronto, Toronto, Ont.

1944—Hall, G. E., M.S.A., M.D., Ph.D., D.ès Sc., LL.D., President and Vice-Chancellor, University of Western Ontario, London, Ont.

1951—Ham, A. W., M.B., Professor of Anatomy, Department of Anatomy, University of Toronto, Toronto, Ont.

1944—Hanna, W. F., C.B.E., O.L.M. (U.S.A.), M.Sc., Ph.D., LL.D., Chief, Botany and Plant Pathology Division, Department of Agriculture, Ottawa, Ont.

1956—Hanes, C. S., Ph.D., Sc.D., F.R.S., Professor of Biochemistry, Department of Chemistry, University of Toronto, Toronto, Ont.

1943—Hart, J. L., M.A., Ph.D., Director, Fisheries Research Board of Canada, Biological Station, St. Andrews, N.B.

1947—Hayes, F. R., M.Sc., Ph.D., D.Sc., G. S. Campbell Professor of Biology and Head of the Department, Dalhousie University, Halifax, N.S.

1953—Heimburger, C. C., M.Sc.F., Ph.D., Biologist in charge of forest tree breeding, Ontario Department of Lands and Forests, Maple, Ont.

1955—Hoar, W. S., M.A., Ph.D., Professor of Zoology and Fisheries, University of British Columbia, Vancouver, B.C.

1951—Hopkins, J. W., M.Sc., Ph.D., National Research Council, Ottawa, Ont.

1917—Huntsman, A. G., B.A., M.D., St. Andrews, N.B. (Ex-President.)

1933—Hutchinson, A. H., M.A., Ph.D., Emeritus Professor and Special Lecturer, Department of Biology & Botany, University of British Columbia, Vancouver, B.C.

1952—Jaques, L. B., M.A., Ph.D., Professor and Head, Department of Physiology, University of Saskatchewan, Saskatoon, Sask.

1950—Johnson, T., B.S.A., M.Sc., Ph.D., Officer in Charge, Plant Pathology Laboratory, Science Service, Canada Agriculture, Winnipeg, Man.

1950—Krotkov, G., Agr. Eng., M.A., Ph.D., Professor of Biology, Queen's University, Kingston, Ont.

1945—Labarre, Jules, B.Ph., L.ès S., D.ès S., Professeur de pharmacie, Université de Montréal, Montréal (P.Q.)

1946—Larmour, R. K., M.Sc., Ph.D., Director of Research, Maple Leaf Milling Co., Limited, Toronto 9, Ont.

1945—Leach, W., M.Sc., Ph.D., D.Sc., Dencross Terrace, Saanichton, B.C.

1951—LEBLOND, C. P., M.D., L.ès Sc., Ph.D., D.Sc., Professor of Anatomy, McGill University, Montreal, P.Q.

1949—LEDINGHAM, G. A., M.B.E., M.Sc., Ph.D., Director, Prairie Regional Laboratory, National Research Council Laboratories, Saskatoon, Sask.

1940—LOCHHEAD, A. G., M.Sc., Ph.D., Bacteriology Division, Science Service, Department of Agriculture, Ottawa, Ont.

1956—MACINTOSH, F. C., M.A., Ph.D., F.R.S., Joseph Morley Drake Professor of Physiology and Chairman of Department, McGill University, Montreal, P.Q.

1924—MACKLIN, C. C., M.B., M.D., M.A., Ph.D., D.Sc., 37 Gerrard St., London, Ont.

1944—MAHEUX, GEORGES, M.A., I.F., M.Sc.Ag., D.Sc., Professeur, Faculté de Génie forestier, Université Laval, Québec (P.Q.)

1941—MAINLAND, D., M.B., Ch.B., D.Sc., F.R.S.E., Professor of Medical Statistics and Chairman of Department, New York University College of Medicine, New York, N.Y.

1931—MASSON, C. L. P., L.ès Sc., M.D., Docteur Honoris Causa de l'Université de Montréal et de l'Université McGill, Directeur du département d'Anatomie pathologique, Université de Montréal, Montréal (P.Q.)

1953—MCCALLA, A. G., M.Sc., Ph.D., Dean, Faculty of Agriculture, Professor of Plant Science, University of Alberta, Edmonton, Alta.

1942—MCFARLANE, W. D., M.A., B.Sc.(Agr.), Ph.D., Director of Research, Canadian Breweries Limited, Research Division, 307 Fleet St. E., Toronto, Ont.

1942—MCHENRY, E. W., M.A., Ph.D., Professor of Nutrition, School of Hygiene, University of Toronto, Toronto, Ont.

1945—MITCHELL, C. A., B.V.Sc., D.V.M., Kirk's Ferry, P.Q.

1936—MOLONEY, P. J., O.B.E., M.A., Ph.D., Connaught Laboratories, University of Toronto, Toronto, Ont.

1938—MOORHOUSE, V. H. K., M.C., B.A., M.B., M.D., 32 Amanda St., Orangeville, Ont.

1950—MORIN, J. E., M.D., M.C.R.M.(C), C.M.C.P.Q., Professeur de bactériologie, directeur des laboratoires, Université Laval, Québec (P.Q.)

1947—MORRELL, C. A., M.A., Ph.D., Director, Food and Drug Divisions, Department of National Health and Welfare, Ottawa, Ont.

1938—MOSS, E. H., M.A., Ph.D., Professor of Botany and Head of the Department, University of Alberta, Edmonton, Alta.

1938—MURRAY, E. G. D., O.B.E., M.A., L.M.S.S.A., M.D., D.Sc., Collip Medical Research Laboratory, University of Western Ontario, London, Ont.

1947—NEATBY, K. W., M.S.A., Ph.D., D.Sc., LL.D., Director, Science Service, Department of Agriculture, Ottawa, Ont.

1954—NEAVE, FERRIS, M.Sc., Ph.D., Principal scientist, Fisheries Research Board, Biological Station, Nanaimo, B.C.

1945—NEEDLER, A. W. H., O.B.E., M.A., Ph.D., D.Sc., Director, Fisheries Research Board, Biological Station, Nanaimo, B.C.

1942—NEWTON, MARGARET, B.S.A., M.Sc., Ph.D., 2392 Beach Dr., Victoria, B.C.

1950—NOBLE, R. L., M.D., Ph.D., D.Sc., Professor and Associate Director, Collip Medical Research Laboratory, University of Western Ontario, London, Ont.

1953—ORR, J. H., M.D., C.M., F.R.C.P.(C), Queen's University, Kingston, Ont.

1955—PAGÉ, E., M.B.E., B.S.A., Ph.D., Directeur de l'Institut de Biologie, Université de Montréal, Case postale 6128, Montréal (P.Q.)

1957—PANISSET, M. G., B.A., D.V., D.V.M., Directeur-adjoint, Institut de Microbiologie et d'Hygiène de l'Université de Montréal, Professeur titulaire, École d'Hygiène; Professeur École Vétérinaire de la Province de Québec, Montréal, P.Q.

1935—PENFIELD, WILDER G., O.M., C.M.G., Litt.B., M.D., M.A., B.Sc., D.Sc., F.R.S., Professor and Chairman of Neurology and Neuro-Surgery; Director, Montreal Neurological Institute, Montreal, P.Q.

1948—POMERLEAU, RENÉ, B.S.A., M.Sc., D.Sc., Chef de laboratoire, Lab. de biologie forestière, Section pathologie, Université Laval, Québec (P.Q.)

1946—PORSILD, A. E., M.B.E., Ph.D., Chief Botanist and Curator of the National Herbarium of Canada, National Museum, Ottawa, Ont.

1942—PRÉFONTAINE, GEORGES, M.D., Lic.Sc., Docteur honoris causa de l'Université d'Alger, Directeur des laboratoires, Hôpital Sanatorium Saint-Joseph, Montréal (P.Q.)

1953—QUASTEL, J. H., A.R.C.S., D.Sc., Ph.D., F.R.S., Montreal General Hospital Research Institute, Montreal, P.Q.

1944—RAWSON, DONALD S., M.A., Ph.D., Professor and Head, Department of Biology University of Saskatchewan, Saskatoon, Sask.

1954—RAYMOND, MARCEL, L.Sc., Botaniste, taxonomiste, Jardin Botanique de Montréal, Montréal (P.Q.)

1956—REMPEL, J. G., M.Sc., Ph.D., Professor, Department of Biology, University of Saskatchewan, Saskatoon, Sask.

1957—RHODES, A. J., M.B., Ch.B., M.D., F.R.C.P. (Edin.), Director, School of Hygiene, Professor of Microbiology, School of Hygiene, University of Toronto, Toronto, Ont.

1956—RICKER, W. E., M.A., Ph.D., Editor, Fisheries Research Board, Biological Station, Nanaimo, B.C.

1954—ROSSITER, R. J., B.Sc., M.A., D.Phil., B.M.B.Ch., D.M., Professor and Head, Department of Biochemistry, University of Western Ontario, London, Ont.

1942—ROUSSEAU, JACQUES, B.A., L.Sc., D.Sc., Ph.D., 5208 Côte St-Antoine, Montréal, (P.Q.)

1939—SCOTT, D. A., M.A., Ph.D., F.R.S., Research member, Connaught Medical Research, Laboratories, University of Toronto, Toronto 5, Ont.

1941—SELYE, HANS, M.D., Ph.D., D.Sc., Institut de Médicine et de Chirurgie Expérimentales, Université de Montréal, Montréal, P.Q.

1955—SENN, H. A., M.A., Ph.D., Head, Botany Unit, Botany & Plant Pathology Division, Science Service, Dept. of Agriculture, Ottawa, Ont.

1946—SHANER, R. F., Ph.B., Ph.D., Professor of Anatomy, University of Alberta, Edmonton, Alta.

1935—SIFTON, H. B., M.A., Ph.D., Head, Department of Botany, University of Toronto, Toronto, Ont.

1940—SIMARD, L. C., M.D., F.R.C.P. (C), 624 Dunlop, Outremont (Montréal), P.Q.

1948—SOLANDT, O. M., O.B.E., B.Sc., M.A., M.D., D.Sc., M.R.C.P., LL.D., Vice-President, Research and Development, Canadian National Railways, Montreal, P.Q.

1951—SPEAKMAN, H. B., B.Sc., M.Sc., D.Sc., LL.D., Director, Ontario Research Foundation, Toronto, Ont.

1953—STRICKLAND, E. H., M.Sc., D.Sc., 3012 Sea View Road, Victoria, B.C.

1957—TARR, H. L. A., M.S.A., Ph.D. (McGill), Ph.D. (Cantab.), Director, Vancouver Technological Station, Fisheries Research Board, Vancouver, B.C.

1934—TAYLOR, N. B., M.D., M.R.C.S., F.R.C.S., 21 Ardwold Gate, Toronto, Ont.

1950—TEMPLEMAN, W., O.B.E., B.Sc., M.A., Ph.D., Director, Fisheries Research Board, Biological Station, St. John's, Newfoundland.

1947—THOMPSON, I. M., B.Sc., M.B., Ch.B., F.R.S.E., Professor of Anatomy and Chairman of the Department, University of Manitoba, Winnipeg, Man.

1921—THOMPSON, W. P., M.A., Ph.D., D.Sc., LL.D., President, University of Saskatchewan, Saskatoon, Sask. (Ex-President.)

1949—THOMPSON, W. R., B.S.A., D.Sc., Ph.D., F.R.S., Director, Commonwealth Institute of Biological Control, Ottawa, Ont.

1936—THOMSON, D. L., M.A., B.Sc., Ph.D., LL.D., Vice-Principal, Dean of the Faculty of Graduate Studies, Professor of Organic and Biological Chemistry, McGill University, Montreal, P.Q.

1950—Tremblay, J.-L. B.Sc.A., Ph.D., Faculté des Sciences, Université Laval, Québec, (P.Q.)
1955—Venning, Eleanor H., M.Sc., Ph.D., Associate Professor of Experimental Medicine, McGill University, Montreal, P.Q.
1934—Wardle, R. A., M.Sc., Professor Emeritus of Zoology, University of Manitoba, Winnipeg, Man.
1930—Wasteneys, H., Ph.D., Professor Emeritus of Biochemistry, University of Toronto, Toronto, Ont.
1943—Wynne, A. M., M.A., Ph.D., Professor and Head, Department of Biochemistry, University of Toronto, Toronto, Ont.
1940—Wynne-Edwards, V. C., M.A., Professor of Natural History, Marsichall College, University of Aberdeen, Aberdeen, Scotland.
1935—Young, E. Gordon, M.Sc., Ph.D., D.Sc., Director of the Atlantic Regional Laboratory, National Research Council, Halifax, N.S.

CORRESPONDING MEMBERS

SECTION I

De Lacretelle, Jacques, de l'Académie française, Paris.

SECTION II

Siebert, Wilbur H., M.A., 182 West Tenth Ave., Columbus, Ohio, U.S.A.

SECTION IV

Watts, W. W., Imperial College of Science and Technology, London, England.

MEDAL AWARDS

MÉDAILLE PIERRE CHAUVEAU

(Founded 1952)

1952—Pierre Daviault
1953—B. K. Sandwell, LL.D., D.C.L.
1954—Gérard Morisset, B.A., LL.L.
1955—Jean-Marie Gauvreau, D.Sc.Pol.
1956—Victor Morin, B.A., LL.D., O.I.P., Ch. Grand'Croix de l'Ordre du Saint-Sépulcre de Jérusalem
1957—Claude Melançon, D.ès S.

FLAVELLE MEDAL

(Founded 1925)

1947—G. B. Reed, O.B.E., M.A., B.Sc., Ph.D., LL.D.
1948—Margaret Newton, B.S.A., M.Sc., Ph.D.
1949—W. P. Thompson, M.A., Ph.D., D.Sc.
1950—C. H. Best, C.B.E., M.A., M.D., D.Sc., F.R.C.P.(C), F.R.S., Hon. D.Sc.(Oxon.)
1951—Wilder G. Penfield, C.M.G., Litt.B., M.D., M.A., B.Sc., D.Sc., F.R.S.
1952—A. G. Huntsman, M.D.
1953—E. G. D. Murray, O.B.E., M.A., L.M.S.S.A., M.D., D.Sc.

1954—D. A. Scott, M.A., Ph.D., F.R.S.
1955—C. S. Hanes, Ph.D., Sc.D., F.R.S.
1956—George Lyman Duff, M.A., M.D., Ph.D.
1957—T. W. M. Cameron, T.D., M.A., Ph.D., D.Sc., M.R.C.V.S.

HENRY MARSHALL TORY MEDAL

(Founded 1943)

1943—John L. Synge, M.A., Sc.D., F.R.S.
1944—Frank Allen, M.A., Ph.D., LL.D.
1945—Otto Maass, C.B.E., M.Sc., Ph.D., LL.D., F.R.S.
1946—John S. Foster, B.Sc., Ph.D., F.R.S.
1947—E. F. Burton, O.B.E., Ph.D.
1949—H. S. M. Coxeter, Ph.D., F.R.S.
1951—T. Thorvaldson, A.M., Ph.D., D.Sc., LL.D.
1953—G. Herzberg, M.A., Dipl.Ing., Dr.Ing., F.R.S.
1955—E. W. R. Steacie, O.B.E., M.Sc., Ph.D., D.Sc., LL.D., D. de l'U. F.R.S.
1957—C. S. Beals, M.A., D.I.C., Ph.D., D.Sc., F.R.S.

LORNE PIERCE MEDAL

(Founded 1926)

1947—Dorothy Livesay (Mrs. Duncan Macnair)
1948—Gabrielle Roy (Mme Carbotte)
1949—John Murray Gibbon, B.A., D. ès L.
1950—Marius Barbeau, LL.L., B.Sc., D. ès L., Dipl.Anth.
1951—E. K. Brown, B.A., D. ès L. (posthumously)
1952—Hugh MacLennan, M.A., Ph.D.
1953—Earle Birney, Ph.D.
1954—Alain Grandbois
1955—William Bruce Hutchison
1956—Thomas H. Raddall, LL.D.
1957—A. M. Klein

TYRRELL MEDAL

(Founded 1928)

1946—A. L. Burt, M.A.
1947—A. R. M. Lower, Ph.D., LL.D.
1948—Le chanoine Lionel Groulx, Ph.D., D.Th., D. ès L.
1949—Reginald G. Trotter, M.A., Ph.D., D.C.L.
1950—John Bartlet Brebner, M.A., B. Litt., Ph.D., Litt.D.
1951—Jean Bruchési, LL.L., D.Sc.Pol., D. ès L., and
D. G. Creighton, M.A., LL.D.
1952—C. B. Sissons, LL.D.
1953—Séraphin Marion, M.A., D. ès L.
1954—G. de T. Glazebrook
1955—C. P. Stacey, O.B.E., A.M., Ph.D.
1956—Mgr Olivier Maurault, C.M.G., P.D., LL.D., p.SS., D.ès L., D.C.L.
1957—George F. G. Stanley, M.A., B.Litt., D.Phil.

WILLET G. MILLER MEDAL
(Founded 1943)

1943—Norman Levi Bowen, M.A., Ph.D., Sc.D.
1945—Morley E. Wilson, Ph.D.
1947—F. H. McLearn, B.E., Ph.D.
1949—H. V. Ellsworth, M.A., Ph.D.
1951—J. E. Hawley, M.A., Ph.D.
1953—C. H. Stockwell, B.A.Sc., Ph.D.
1955—J. Tuzo Wilson, O.B.E., Legion of Merit (U.S.A.), M.A., Ph.D.
1957—J. E. Gill, B.Sc., Ph.D.

THE HARRISON PRIZE AWARD
(Founded 1957)

1957—R. G. E. Murray, M.A., M.D., C.M.; C. F. Robinow, M.D.

PRESIDENTS

1947-1948 . . . W. P. Thompson, M.A., Ph.D., D.Sc.
1948-1949 . . . Gustave Lanctôt, D.ès L., LL.M., LL.D., D.Sc.Pol., C.R.
1949-1950 . . . Joseph A. Pearce, M.A., Ph.D., D.Sc.
1950-1951 . . . J. J. O'Neill, M.Sc., Ph.D.
1951-1952 . . . H. F. Angus, M.A., B.C.L., LL.D.
1952-1953 . . . G. B. Reed, O.B.E., M.A., B.Sc., Ph.D., LL.D.
1953-1954 . . . Jean Bruchési, LL.L., D.Sc.Pol., D. ès L.
1954-1955 . . . E. W. R. Steacie, O.B.E., Ph.D., D.Sc., F.R.S.
1955-1956 . . . G. S. Hume, O.B.E., Ph.D.
1956-1957 . . . W. A. Mackintosh, C.M.G., M.A., Ph.D., LL.D., D.C.L.
1957-1958 . . . T. W. M. Cameron, T.D., M.A., Ph.D., D.Sc., M.R.C.V.S.

LIST OF PRESIDENTS OF SECTIONS

SECTION I

1947-1948 . . . . . Arthur Saint-Pierre
1948-1949 . . . . . Léopold Houlé
1949-1950 . . . . . Le chanoine Georges Robitaille
1950-1951 . . . . . Donatien Frémont
1951-1952 . . . . . L'abbé Arthur Maheux
1952-1953 . . . . . Claude Melançon
1953-1954 . . . . . Gérard Morisset
1954-1955 . . . . . Jean Chauvin
1955-1956 . . . . . Eugène L'Heureux
1956-1957 . . . . . Jean-Marie Gauvreau
1957-1958 . . . . . Adrien Plouffe

SECTION II

1947-1948	R. K. Gordon
1948-1949	B. K. Sandwell
1949-1950	A. G. Dorland
1950-1951	W. A. Mackintosh
1951-1952	A. S. P. Woodhouse
1952-1953	A. R. M. Lower
1953-1954	F. M. Salter
1954-1955	D. A. MacGibbon
1955-1956	J. S. Thomson
1956-1957	W. Kaye Lamb
1957-1958	F. H. Underhill

SECTION III

1947-1948	E. W. R. Steacie
1948-1949	J. S. Foster
1949-1950	C. S. Beals
1950-1951	H. G. Thode
1951-1952	Gerhard Herzberg
1952-1953	R. L. Jeffery
1953-1954	P. E. Gagnon
1954-1955	R. M. Petrie
1955-1956	W. H. Watson
1956-1957	H. S. M. Coxeter
1957-1958	Léo Marion

SECTION IV

1947-1948	F. J. Alcock
1948-1949	Victor Dolmage
1949-1950	T. L. Tanton
1950-1951	P. S. Warren
1951-1952	G. S. Hume
1952-1953	G. Hanson
1953-1954	T. H. Clark
1954-1955	J. B. Mawdsley
1955-1956	J. E. Hawley
1956-1957	H. C. Gunning
1957-1958	H. C. Rickaby

SECTION V

1947-1948	E. Gordon Young
1948-1949	A. H. Hutchinson
1949-1950	T. W. M. Cameron
1950-1951	L. C. Simard
1951-1952	C. L. Huskins
1952-1953	W. A. Clemens
1953-1954	R. D. Gibbs
1954-1955	E. G. D. Murray
1955-1956	Georges Maheux
1956-1957	W. H. Cook
1957-1958	W. R. Campbell

ASSOCIATED ORGANIZATIONS

The Canadian Institute of Mining and Metallurgy

THE ROYAL SOCIETY OF CANADA

REPORT OF THE HONORARY SECRETARY FOR THE YEAR 1956–57

COUNCIL MEETINGS

The Council held four meetings during the year to conduct the affairs of the Society. The Report of Council presented to the annual meeting of the Royal Society of Canada contains a complete account of the year's business.

The Sections recommended the election of twenty-seven Fellows. Their names, and the Sections to which they were elected, appear under "Annual Meeting."

Six medals and two prizes were awarded by the Society:

Médaille Pierre Chauveau to M. Claude Melançon
Flavelle Medal to Dr. T. W. M. Cameron
Henry Marshall Tory Medal to Dr. C. S. Beals
Lorne Pierce Medal to Mr. A. M. Klein
Tyrrell Medal to Dr. George F. G. Stanley
Willet G. Miller Medal to Dr. J. E. Gill
Harrison Prize Awards to Dr. R. G. E. Murray and Dr. C. F. Robinow

(Citations are given on pages 38–44.)

On the recommendation of the Scholarships Board one post-doctoral and three pre-doctoral scholarships were awarded to the following:

Nathan J. Divinsky, University of Manitoba, a post-doctoral scholarship to study mathematics, algebra, at Queen Mary College, University of London.

Roger J. E. Brown, of Toronto, a pre-doctoral scholarship for research on Permafrost in Canada at Scott Polar Research Institute, England.

Kennneth J. Rea, of Saskatchewan, a pre-doctoral scholarship to study "The Economic Development of the Canadian Northwest" at the London School of Economics, England.

Jean-Denis Gendron, of Québec, a pre-doctoral scholarship to carry on research at the Sorbonne, Paris.

A pre-doctoral scholarship was offered to Gilles Beausoleil of Montreal, to study Labour Economics at the Massachusetts Institute of Technology. Mr. Beausoleil who had already accepted a Ford Foundation Fellowship declined the award.

Two Rutherford Memorial Scholarships of $500 each were awarded, to supplement National Research Council post-doctoral fellowships, to Dr. Walter Bushuk who will study at the University of Leiden under Dr. J. J. Hermans and Dr. Dallas G. Santry who will study at Cambridge University under Dr. A. G. Maddock.

Canadian Government Overseas Awards were offered for the sixth time in 1957. Twelve fellowships and sixteen scholarships were awarded for 1957–1958 to the following recipients:

Fellowships

Art (Creative)
Bobak, Bruno J.
Harris, Lawren P.
Ogilvie, William A.

Art (History & Education)
Ostiguy, Jean R.
Simard, Jean

History
Salmon, Edward T.

Literature
Tracy, Clarence
Woodcock, George

Music
Mercure, Pierre

Pathology
Rocher, Guy

Physics
Guptill, Ernest W.

Theatre
Giroux, André

Scholarships

Art (Creative)
Bergeron, Miss Suzanne
Giguère, Roland

Art (History)
Leith, James A.

Economics & Political Science
Bourassa, Robert

Geography
Trotier, Louis

Law
Lesage, Bernard

Literature
de Chantal, René*
Lapointe, Gatien*
Ridgway, Ronald S.
Roy, George R.*
Webb, Miss Phyllis J.

Music
Brown, Howard F.
MacDonald, Boyd

Philosophy
Daniells, Stanley S.

Psychology
Tourillon, Miss Denise

Trade Unionism
Tallman, Miss Eileen

The asterisk indicates that these three scholarships were renewals of awards made last year. No fellowships were renewed.

A Special Committee consisting of Dr. D. L. Thomson, Chairman, Chairmen of the four sectional committees, Dr. W. Kaye Lamb and the Honorary Treasurer, was appointed by Council to look into the matter of Royal Society of Canada Scholarships and also to prepare a brief for presentation to Canada Council.

There were seven retirements: J. D. Leechman, D. A. MacGibbon, E. J. Pratt, Section II; J. A. Bancroft, G. Hanson and C. W. Knight, Section IV; and W. H. Brittain, Section V.

ANNUAL MEETING

The annual meeting was opened in the University Academic Hall, University of Ottawa, at 10 A.M., June 10. The following Fellows registered:

Section I

Audet, Louis-Philippe; Beauchesne, Arthur; Brouillette, Benoît; Bruchési, Jean; Chabot, Cécile; Daviault, Pierre; D'Eschambault, l'abbé Antoine; Douville, Raymond; Elie, Robert; Gauthier, Robert; Gauvreau, Jean-Marie; Gouin, Paul; Lamontagne, Maurice; Lanctôt, Gustave; Lefebvre, Jean-Jacques; Legault, le R. P. Emile; Lévesque, le R. P. Georges-Henri; Lortie, Léon; Maheux, l'abbé Arthur; Maurault, Mgr Olivier; Ollivier, Maurice; Plouffe, Adrien; Régis, le R. P. Louis-Marie; Roy, Antoine; Sylvestre, Guy.

Section II

Alexander, Henry; Alexander, W. H. (retired); Angus, H. F.; Bailey, A. G.; Birney, A. E.; Bissell, C. T.; Bladen, V. W.; Boeschenstein, H.; Britnell, G. E.; Brown, G. W.; Clark, S. D.; Collin, W. E.; Creighton, D. G.; Daniells, Roy; Dorland, A. G.; Easterbrook, W. T.; Elliott, G. A.; Fairley, Barker; Fieldhouse, H. N.; Fowke, V. C.; Getty, R. J.; Gilmour, G. P.; Goudge, T. A.; Jenness, D. (retired); Johnson, A. H.; Keirstead, B. S.; Kirkconnell, Watson; Lamb, W. Kaye; Lower, A. R. M.; MacGillivray, J. R.; MacGregor, D. C.; MacKenzie, N. A. M.; Marshall, Herbert; Morton, W. L.; Muckle, J. T.; Phelps, Arthur L.; Pierce, Lorne (retired); Priestley, F. E. L.; Raymond, W. O.; Rose, W. J.; Ross, M. M.; Rouillard, C. D.; Salter, F. M.; Scott, F. R.; Sissons, C. B.; Soward, F. H.; Stacey, C. P.; Stanley, Carleton; Stanley, George F. G.; Taylor, K. W.; Thomson, J. S.; Timlin, Mabel F.; Underhill, F. H.; Woodhouse, A. S. P.

Section III

Adams, G. A.; Archibald, W. J.; Babbitt, J. D.; Baer, Erich; Beals, C. S.; Bell, R. E.; Benson, G. C.; Carmichael, Hugh; Coxeter, H. S. M.; Crawford, M. F.; Currie, B. W.; Davies, F. T.; Douglas, A. E.; Duckworth,

H. E.; Elliott, L. G.; Field, G. S.; Flood, E. A.; Foster, J. S.; Gagnon, Paul E.; Hachey, H. B.; Haslam, R. N. H.; Henderson, J. T.; Henderson, W. J.; Herzberg, Gerhard; Hogg, Helen S.; Howlett, L. E.; Hurst, D. G.; Jeffery, R. L.; Jones, R. N.; Katz, Leon; Keys, D. A.; Lang, R. J. (retired); Laurence, G. C.; Lemieux, R. U.; LeRoy, D. J.; Lewis, W. B.; Maass, Otto; Macphail, M. S.; Manske, R. H. F.; Marshall, J. S.; McKinley, D. W. R.; McLay, A. B.; Mendelsohn, N. S.; Middleton, W. E. K.; Miller, A. H.; Misener, A. D.; Morrison, J. A.; Munro, L. A.; Pearce, J. A.; Pidgeon, L. M.; Puddington, I. E.; Robertson, J. K. (retired); Robinson, G. de B.; Robson, J. M.; Sargent, B. W.; Shaw, A. N.; Shrum, G. M.; Spinks, J. W. T.; Steacie, E. W. R.; Thode, H. G.; Thomson, Andrew; Ward, A. G.; Watson, W. H.; Wetmore, F. E. W.; Wiesner, K.; Williams, W. L. G.; Woonton, G. A.; Wu, Ta-You; Wyman, Max.

Section IV

Alcock, F. J.; Armstrong, H. S.; Berry, L. G.; Bostock, H. S.; Boyle, R. W.; Caley, J. F.; Clark, T. H.; Denis, B. T.; Derry, D. R.; Douglas, G. V.; Fortier, Y. O.; Fraser, H. J.; Frebold, Hans; Fritz, Madeleine A.; Gill, J. E.; Gunning, H. C.; Gussow, W. C.; Hage, C. O.; Hanson, George, Harrison, J. M.; Hawley, J. E.; Henderson, J. F.; Hume, G. S.; Jolliffe, A. W.; Kindle, E. D.; Lang, A. H.; Lord, C. S.; Legget, R. F.; MacKay, B. R. (retired); MacKenzie, G. S.; Malcolm, Wyatt (retired); Mawdsley, J. B.; McLearn, F. H.; O'Neill, J. J.; Poitevin, Eugène; Rice, H. M. A.; Rickaby, H. C.; Robinson, S. C.; Sproule, J. C.; Sternberg, C. M.; Stevenson, J. S.; Tanton, T. L.; Warren, P. S.; Weeks, L. J.; Wickenden, R. T. D.; Williams, M. Y.; Wilson, J. Tuzo; Wilson, M. E.; Wright, J. F.

Section V

Anderson, R. M.; Bailey, D. L.; Bannan, M. W.; Butler, G. C.; Cameron, T. W. M.; Campbell, W. R.; Cantero, Antonio; Collier, H. B.; Cook, W. H.; Cormack, R. G. H.; Craigie, E. Horne; Dauphinee, J. A.; Drayton, F. L.; Dunbar, M. J.; Dymond, J. R.; Ettinger, G. H.; Ferguson, J. K. W.; Fisher, K. C.; Frappier, Armand; Gibbard, James; Gibbs, R. D.; Gibbons, N. E.; Grace, N. H.; Groves, J. W.; Haist, R. E.; Hall, G. E.; Hanna, W. F. ; Hayes, F. R.; Heimburger, C. C.; Johnson, T.; Krotkov, G.; Ledingham, G. A.; Maheux, Georges; Moloney, P. J.; Morin, J. E.; Morrell, C. A.; Moss, E. H.; Murray, E. G. D.; Neatby, K. W.; Needler, A. W. H.; Newton, Margaret; Orr, J. H.; Panisset, M.; Porsild, A. E.; Rawson, D. S.; Rhodes, A. H.; Rousseau, Jacques; Senn, H. A.; Shaner, R. F.; Sifton, H. B.; Solandt, O. M.; Thompson, I. M.; Thompson, W. P.; Thomson, D. L.; Tremblay, J.-L.; Young, E. Gordon.

The meeting, the first general session of the seventy-fifth Anniversary of the Royal Society of Canada, was called to order by the President, Dr. W. A. Mackintosh, who welcomed the Fellows and their guests and ex-

pressed the gratitude of the Society to the University of Ottawa for its generosity in playing host to the Society. Rev. Father H. Légaré, vice-rector of the University of Ottawa, welcomed the Fellows in the following words:

The University of Ottawa is proud to receive you today. That a Society like yours should have accepted our invitation to celebrate the seventy-fifth anniversary of its foundation within our walls is indicative of the interest you have, I am sure, in the development of the university of Canada's capital city. May I express to you our deep gratitude for your presence here: it is indeed an honour for any institution to be the host to so many distinguished scholars, and on behalf of the Very Reverend Father Rector, it is my pleasure and privilege to extend to each and all of you the heartiest welcome.

Yours is an important meeting. It is so, of course, every year, but it is more so in this anniversary year which you are marking with special celebrations. Seventy-five years is not much in the life of most nations; but in this New World it is already a distinction for any society to reach that age. There are not many societies in this country which can look back upon such a long and fruitful life, and yet remain as vigorous as yours. There are not many either, if any, which enjoy such prestige, have exerted such influence nor can claim so many impressive achievements.

When your charter members met in this city in 1882 to officially establish your society, the Marquess of Lorne, then governor-general, had this to say at the opening of the first session: "The meeting together of our eminent men will contribute to unite on a common ground those best able to express the thoughts and illustrate the history of the time. It will serve to strengthen emulation among us, for the discussion of progress made in other lands must breed the desire to push the intellectual development of our own." Well, gentlemen, all those familiar with the history of your society are agreed that you have fulfilled the aims your founder had in mind.

Seventy-five years ago, Canada was still an underdeveloped and uninfluential country of some four million, and Ottawa was then a small town of twenty-five thousand souls. Both have grown tremendously since, and our nation is now one of the middle powers of the world and what was then referred to as a "Westminster in the wilderness" has become a beautiful city of some two hundred thousand. It is an established fact that in this spectacular growth of Canada, fellows of your society played a leading part and one would need much more time than I have at my command to recite your individual and collective contributions to the progress of the nation. Without your distinguished achievements over seventy-five years in the fields of belles-lettres, the arts, and the humanities as well as in those of science and technology, Canada would not be the great country it is to-day.

To my mind, however, the most significant, and heartening feature of this anniversary meeting of yours is that you should have decided, not to lean over your past achievements, however impressive they may be, but to endeavour to estimate what you have called "our debt to the future." This symposium in which Fellows of your five sections will get together to explore the problems facing this nation to-day will amount to a sort of a Gordon Report on the cultural and scientific prospects of Canada, and I would not hesitate to predict that it will become another landmark in the search for a better future.

This University, Mr. President, was granted its charter by the Legislature of the Province of Canada in 1866, that is one year before Confederation. Located in the capital city, where Ontario and Quebec meet, it is at the very heart of our national life and it is a natural meeting-ground for the two great cultures we have inherited from the two glorious nations of modern Europe.

It has grown with the city and it's a long way from the old Bytown College, founded in 1848, to the modern university which is proud to receive you to-day. We hope that your stay here will be both pleasant and fruitful and I wish you every success in your proceedings.

Au nom du Très révérend Recteur, j'ai le plaisir et l'honneur de vous souhaiter la plus cordiale bienvenue dans les murs de cette université à l'occasion de votre soixante-quinzième réunion annuelle. C'est pour cette université un privilège que de pouvoir accueillir un groupe aussi distingué de savants et d'humanistes, surtout en cette année où vous tenez à souligner par des manifestations particulières le soixante-quinzième anniversaire de votre fondation. Soixante-quinze ans n'est pas une époque très longue dans la vie d'un peuple, mais chez une nation aussi jeune que la nôtre, c'est déjà beaucoup. Rares sont les sociétés canadiennes qui soient aussi vieilles, et aussi jeunes à la fois; rares aussi celles dont le prestige, l'influence et les réalisations soient plus grandes.

Lorsque vous avez tenu votre première réunion annuelle dans cette ville en 1882, ce pays n'avait guère atteint qu'à un stage élémentaire de son développement. Le Canada ne comptait qu'un peu plus de quatre millions d'habitants, et la capitale n'était alors qu'une petite ville de ving-cinq mille âmes. L'un et l'autre ont grandi depuis avec la vigueur de la jeunesse, et je sais qu'au cours des derniers soixante-quinze ans, les membres de votre société ont joué un rôle primordial dans tous les domaines de la vie nationale, contribuant au progrès des lettres et des arts, de l'économie et de l'industrie, des sciences et des techniques.

Ce qui me paraît hautement significatif et réconfortant, c'est qu'en ce soixante-quinzième anniversaire, vous ayez décidé non pas de dresser le bilan de vos réalisations passées — bilan impressionnant et dont vous pouvez être fiers — mais de regarder vers l'avenir et de chercher à élucider les problèmes que nous avons à résoudre pour accroître encore nos ressources tant matérielles q'humaines. Le symposium qui va réunir les membres de vos cinq sections constituera, je n'en doute pas, un document de première valeur pour tous qui s'occupent de ces problèmes.

L'université qui vous accueille, Messieurs, comptait dans son personnel, tout récemment encore, l'un de vos membres distingués, et je m'en voudrais de ne pas rappeler, dans une occasion comme celle-ci, la mémoire du R. P. Georges Simard, O.M.I. Esprit particulièrement brillant et pénétrant, aux idées peut-être parfois contestées mais toujours originales et profondes, le R. P. Simard demeure l'un de ceux qui ont le mieux compris le caractère propre de l'Université d'Ottawa et en ont le mieux prévu l'orientation et le développement.

Il serait fier de vous voir réunis ici au milieu de nous. Nous espérons que votre séjour chez nous sera aussi agréable que fructueux et je formule les voeux les meilleurs pour le succès de vos délibérations.

Dieu vous ait en sa garde. May God bless and enlighten your deliberations.

The President thanked Rev. Father Légaré.

The President called for a motion to approve the minutes of the last Annual Meeting. It was moved by Dr. W. Kirkconnell, seconded by Dr. G. S. Hume, that the minutes be approved. CARRIED.

The election of twenty-seven new Fellows, as listed in the Report of Council, was moved by Dr. E. W. R. Steacie, seconded by Dr. Léo Marion. CARRIED: Paul Beaulieu, Raymond Douville, Robert Gauthier, Paul Gouin, Rév. père Emile Legault, Section I; C. T. Bissell, H. Boeschenstein, W. T.

Easterbrook, A. H. Johnson, J. R. MacGillivray, Hilda Neatby, Section II; G. C. Benson, R. U. Lemieux, N. S. Mendelsohn, A. G. Ward, K. Wiesner, Ta-You Wu, Section III; H. S. Armstrong, R. W. Boyle, C. O. Hage, W. H. Mathews, Section IV; G. C. Butler, R. G. H. Cormack, R. E. Haist, M. Panisset, A. H. Rhodes, H. L. A. Tarr, Section V.

Those present were formally presented to the President of the Society by the presidents of the Sections. They received diplomas and signed the Charter Book. M. Paul Beaulieu, Section I, Miss Hilda Neatby, Section II, Dr. W. H. Mathews, Section IV, and Dr. H. L. A. Tarr, Section V were absent. Dr. A. E. Birney, Section II, who had been elected in 1954 received his diploma and signed the Charter Book.

The Honorary Secretary presented the Report of Council and stated that he had nothing to add to that which was found in the Report. He referred it to the Sections for approval.

The meeting was adjourned at 11 A.M.

Sectional Meetings were held each morning on the 10th, 11th, 12th and 13th of June. From 2 P.M. to 5 P.M. on June 10th, 11th and 12th the public was invited to hear discussions on the general symposium entitled "Our Debt to the Future," "Présence de Demain."

On Monday evening a dinner was given in the ballroom of the Chateau Laurier by the National Research Council and the Royal Society of Canada to Fellows and their wives. At this reception medals were presented to this year's winners and the President gave his Address entitled "These Seventy-Five Years."

A reception by the University of Ottawa was held on Tuesday, June 11th, for the Fellows, their wives and visitors.

On Wednesday evening the Seventy-fifth Anniversary dinner was given in the ballroom of the Chateau Laurier by the Royal Society of Canada to Fellows and their wives. His Excellency the Governor-General addressed the Society and announced the acceptance of an Honorary Fellowship in the Royal Society of Canada by His Royal Highness, Prince Philip, Duke of Edinburgh.

The following message of congratulations from the Académie française was read by His Excellency the French Ambassador:

L'Académie française est heureuse, à l'occasion du soixante-quinzième anniversaire de la Société Royale du Canada, d'adresser à celle-ci ses félicitations et ses voeux. Les liens qui unissent la France au Canada sont nombreux et solides. L'Académie française se sent très fière du maintien, au-delà des océans, d'une brillante culture française, cependant que l'amitié de la France et de la Communauté britannique, encore resserrée par la récente visite de Sa Majesté la Reine Elizabeth II, lui permet de se réjouir aussi de l'intime collaboration, au Canada, de deux anciennes et nobles traditions.

Que l'Académie française, avec la Société Royale de Londres, ait pu inspirer les fondateurs de la Société Royale du Canada, est pour nous un juste sujet de satisfaction. Notre but commun est de maintenir et de promouvoir une civilisation occidentale qui a le plus beau passé et pour laquelle nous souhaitons un grand avenir. Il nous est précieux de savoir que, sur un autre continent, et loin des pays où elle est née, cette civilisation demeure vivace.

L'Académie française sera toujours heureuse de coopérer avec la Société Royale du Canada. Elle la prie d'accepter ses assurances de confraternité et les souhaits qu'elle forme pour une association de plus en plus étroite de nos deux compagnies et de nos deux nations.

His Excellency the High Commissioner for the United Kingdom read the following message of congratulations from The Royal Society of London:

An especially close friendship exists between scientists in Canada and Great Britain. The Fellows of the Royal Society of London have followed with keen interest the growth and activities of the Royal Society of Canada since it was founded in 1882 by the Governor-General, the Marquess of Lorne (afterwards Duke of Argyll), with Sir William Dawson, a Fellow of the Royal Society of London, as its first President. The fulfilment of the high hopes with which it was founded and the repute which it has attained have been observed with gratification.

Several Fellows of the Royal Society of London have been Presidents of the Royal Society of Canada and the friendly relations which have always existed between the two societies are strengthened by the number of scientists, at present 24, who are members of both.

The Royal Society of London sends its greetings to the Royal Society of Canada on the occasion of its seventy-fifth anniversary and expresses the confident hope that it may long continue its important role in the advancement of Canadian science and learning.

The Second General Meeting of the Society was held at 11 A.M., Thursday, June 13th.

It was moved by M. Pierre Daviault, seconded by Dr. E. G. D. Murray that the Report of Council be adopted. CARRIED.

The Report of the General Nominating Committee was read by Dr. Léo Marion. It was moved by Dr. Paul E. Gagnon, seconded by Dr. G. M. Shrum that the Report of the General Nominating Committee be adopted. CARRIED.

Dr. T. W. M. Cameron took the Chair and expressed his appreciation of the honour which the Society had paid him in electing him to the Presidency.

Reports were then received from the Sections. It was moved by Dr. N. E. Gibbons, seconded by Col. C. P. Stacey, that the accounts of the Royal Society be audited again next year by the firm of J. B. Watson, chartered accountants. CARRIED.

Dr. T. W. M. Cameron expressed the thanks of the Society to:

The outgoing President and Council for the excellent way in which they had conducted the affairs of the Society in 1956–57.

Dr. W. H. Watson and to all the Fellows who had helped make a success of the Seventy-fifth Anniversary celebrations.

The Executive Secretary.

Dr. W. A. Mackintosh expressed the thanks of the Society to:

The Very Rev. Father Rodrigue Normandin, Rector of the University of Ottawa and to the University of Ottawa for their kindness in affording the Society the facilities of the University for this meeting and for the wonderful reception and vin d'honneur offered to the Fellows and their wives.

Carleton University for their kind offer of the facilities of that University.

The Ladies' Committee (Miss Evelyn Leblanc).

The Local Committees for their co-operation in arranging all matters pertaining to the meetings.

Mr. M. W. Thistle who acted as Public Relations Officer and to the Members of the Press for their coverage of the meeting.

Dr. E. W. R. Steacie and the National Research Council for the excellent dinner provided on Monday evening.

The Experimental Farm and Science Service for Thursday's tour.

His Excellency the Governor-General for the Garden Party.

It was agreed to accept Dr. Andrew Stewart's cordial invitation to hold the next meeting at the University of Alberta.

The meeting was adjourned at 11.40 A.M.

Hearty approval was expressed of Dr. W. H. Watson's motion of thanks to Dr. T. W. M. Cameron and his Plans Committee.

Dr. Cameron invited the new Council to meet at once in Room 2, University of Ottawa's Academic Hall.

PRESENTATION OF MEDALS AND PRIZES

Médaille Chauveau

Claude Melançon

Monsieur le Président:

A cause de l'amitié que ses confrères lui portent et de l'admiration qu'ils ont pour son œuvre, c'est une joie de qualité et un grand honneur que de vous présenter le titulaire de la Médaille Chauveau 1957, M. Claude Melançon, membre de la Société royale depuis 1943 et dont il fut président de la Section française.

M. Mélançon a été tour à tour censeur conjoint de la Presse et directeur associé du Service de l'information en temps de guerre, directeur adjoint du Service des Relations extérieures des Chemins de fer nationaux. Comme tel il a rendu d'éminents services à son pays. Mais ce qui nous intéresse tout particulièrement, c'est son violon d'Ingres, ses études d'histoire naturelle au Canada.

C'est ainsi qu'il nous a promenés « Par terre et par eau » afin de nous faire connaître « Nos animaux chez eux » et les « Poissons de nos eaux. » Et puis, s'élevant plus haut, il nous a présenté nos amis de la gent ailée, nos « Charmants voisins! »

Grâce à ce vulgarisateur de grande classe qui sait transmettre ses vastes connaissances aux grands et aux petits, nous savons maintenant tout ce qu-il est nécessaire de connaître sur nos frères des bois, de l'onde et des airs. Et dans « Inconnus et méconnus » nous avons été mis au courant des moeurs des amphidiens et des reptiles du Québec.

M. Claude Mélançon est non seulement un savant, mais il écrit dans un style châtié et dans une langue claire et bien à la portée des plus humbles de nos compatriotes.

La France a reconnu ses mérites en le nommant Officier d'Académie en 1930 et la province de Québec lui accorda le Prix David en 1934. La Médaille Chauveau créée par la Section française de notre société est décernée, chaque année, à un écrivain afin de le récompenser pour l'ensemble de son oeuvre. M. Mélançon nous présente une production utile, bienfaisante et qui honorerait l'histoire naturelle de tous les pays civilisés. Cet homme renseigné en se penchant sur la nature canadienne a su tirer les plus belles leçons. Son action de chercheur ouvre des horizons illimités à ceux qui, demain, voudront approfondir encore les études et les recherches dans ce domaine.

Il a été un excellent travailleur, un grand réalisateur et c'est avec infiniment de plaisir M. le Président que j'ai l'honneur de vous présenter "in absentia" M. Claude Mélançon, titulaire de la Médaille Chauveau 1957.

Jean-Marie Gauvreau

Flavelle Medal

Thomas Wright Moir Cameron

Mr. President:

It is an honour to present to you for the Flavelle Medal, Thomas Wright Moir Cameron, Professor of Parasitology at McGill and Director of the Institute of Parasitology at Macdonald College. Born in Scotland, he was educated at the Universities of Glasgow, Edinburgh, Oxford and London, and holds, among other degrees and distinctions, a Ph.D. in Parasitology and a D.Sc. in Zoology. Before coming to Canada he held positions on the staff of the Universities of London and Edinburgh. In World War I he served first with the Highland Light Infantry and then joined the Royal Flying Corps and R.A.F. In the last war he was Instructor in Tropical Medicine to all Canadian Armed Forces.

The responsibilities reflected in his appointments, membership of committees, and special undertakings prove the confidence he has earned in the opinion of scientists and responsible public and scientific bodies. To cite only a few examples, he is Vice-President of this Society, a member of the Fisheries Research Board of Canada, Consultant to the Laboratory of Hygiene of the Department of National Health and Welfare, Visiting Professor to the Universities of Ottawa and Vermont, and Editor of the *Canadian Journal of Zoology*. Dr. Cameron is a Fellow of several scientific societies and a member of many more.

Although Dr. Cameron has accepted many time-consuming responsibilities, he has maintained his primary interest in parasitological research, as shown by the large number of important research papers he has published, together with five books that are widely used as textbooks or reference works. His research involves the recognition of a number of new species, elucidation of difficult life histories, recognition of new hosts, enlightening studies on the physiology of both parasite and host, and penetrating concepts on the place of parasitology in both its economic and scientific aspects.

As a parasitologist, he is not bound by hard and fast restrictions, but he brings to every problem a refreshing orientation and general biological coordination that not only give perspective but envisage the essential needs for investigation. As a teacher he exercises a stimulating influence on students and those associated with him in research with his generous encouragement and wise guidance, and his relations with them reflect friendship and admiration.

On behalf of Section V, I commend to you Thomas Wright Moir Cameron as a worthy recipient of the Flavelle Medal.

W. H. Cook

Henry Marshall Tory Medal, 1957

Carlyle Smith Beals

Mr. President:

I have the honour to present for the award of the Henry Marshall Tory Medal, Carlyle Smith Beals, Dominion Astronomer. Dr. Beals has pursued his scientific career to renown on the east coast, on the west coast, and latterly in the heart of Canada at the Dominion Observatory, Ottawa. For his researches of a highly precise nature into some of the little understood and strange classes of stars in the sky, he has won world-wide recognition.

A native of Nova Scotia, where he took his undergraduate work at Acadia, he proceeded to Toronto and to the Imperial College of Science and Technology, London, for higher degrees. After a year as assistant professor at his first alma mater, he was appointed astronomer at the Dominion Astrophysical Observatory. There his skill in instrument design and application, and his thorough knowledge of precise astrophysics, enabled him to make major contributions in his field of study. His early work on the spectra of Wolf Rayet stars, followed by investigation on the P Cygni stars, was the beginning of our understanding of these objects which are so different from normal stars. From these he proceeded to fundamental work on the amount of interstellar gas and dust in space, with studies of the strengths of the interstellar lines of calcium and sodium with increasing distance. His great research patience is well illustrated by a photograph of 25 hours' exposure that he took with the great 73-inch Victoria telescope to unfathom the mysteries of the curious star H.D. 190073.

His outstanding career has already been recognized in many ways, among them his election as president of Section III of this Society, as Fellow of the Royal Society of London, as vice-president of the American Astronomical Society, as president of the Royal Astronomical Society of Canada, and as the recipient of an honorary doctor of science degree from Acadia.

Not the least of his honors was his appointment as Dominion Astronomer in 1946, at which time he relinquished his position of assistant director of the Dominion Astrophysical Observatory. His versatility has been well shown in his latest post, where of necessity his interests were broadened into fields such as geophysics, allied to astronomy. His zeal for other researches than his own special stars has been extended with important results to such worthy projects as the search for meteor craters over Canada. Under his guidance the Dominion Observatory has gained increased strength.

Mr. President, it is now my happy privilege to present Carlyle Smith Beals for the award of the Tory Medal.

H. S. M. Coxeter

Lorne Pierce Medal

Abraham M. Klein

Mr. President:

I have the honour to present to you, as recipient of the Lorne Pierce Medal, Abraham M. Klein, poet and novelist.

Born in Montreal in 1909, he graduated from McGill University in 1930, and after studying law at the University of Montreal was called to the bar of Quebec in 1933.

The law may bring A. M. Klein his living, but it is four little books of poetry that have brought him to the notice of the nation, and to this platform this evening.

To describe his gifts in a few words is not easy, owing in part to his versatility. In one poem he writes with deceptively simple directness; in another he employs splendidly ornate mannerisms; and in both he is equally competent and equally at home. His themes are as versatile as his language. Proud of a great heritage, and imaginatively stirred by it, he reflects very vividly in his work the richness of that heritage, and the power of historic patterns of faith and ritual. And yet he is at the same time profoundly Canadian, greatly attached to his French-speaking fellow citizens; a thoughtful, witty, warmly generous observer of the human scene in his native city.

We feel confident that he is contributing a permanent page to the literature of this country.

Mr. President, I am proud to present A. M. Klein to receive the Lorne Pierce medal.

W. Kaye Lamb

Tyrrell Medal

Dr. George Francis Gilman Stanley

Mr. President:

I have the honour to present to you, to receive the Tyrrell Medal, Dr. George Francis Gilman Stanley.

Dr. Stanley was born in Calgary in 1907, graduated from the University of Alberta, and was appointed Rhodes Scholar from the province. He studied at Keble College, Oxford, and received the degree of Doctor of Philosophy from Oxford University.

During the Second World War Dr. Stanley served as Deputy Director of the Historical Section of the General Staff, and he retired from the Army with the rank of Lieutenant-Colonel.

He has taught at Mount Allison University, and the University of British Columbia, and is now Head of the Department of History at the Royal Military College, Kingston.

His first book was published in 1936: *The Birth of Western Canada: The Story of the Riel Rebellions*. Since the war he has published numerous articles and two further volumes: *Canada's Soldiers: The Military History of an Unmilitary People*, and a collection of the letters of John Henry Lefroy. In 1948 he was awarded a Guggenheim Fellowship for study in Canadian history, and in 1955 he was elected President of the Canadian Historical Association. A short essay on Louis Riel, written for the Association's "Historical Booklet" series, is to be followed shortly by a full-scale biography.

As the titles of his books indicate, Dr. Stanley's research has been chiefly in the fields of military history, and the history of the Canadian West. In both he has done distinguished work, but perhaps his most valuable contribution has been a better understanding of the clash of French, Indian and Anglo-Saxon cultures that occurred in earlier days in the prairie region.

Mr. President, I am happy to present Dr. Stanley to receive the Tyrrell Medal.

W. Kaye Lamb

Willet G. Miller Medal

James Edward Gill

Mr. President:

Section IV wishes to honour James Edward Gill not only for his outstanding scientific contributions to geology, but also for his many years of service as a teacher and as an exceptionally active guide and counsellor to the profession.

Dr. Gill was born in Nelson, British Columbia, and grew up during the rapid development of the mining industry in the west Kootenay District. His professional training was obtained at the University of British Columbia, at McGill, and finally at Princeton University where he was a Proctor Fellow. After three years on the Faculty of the University of Rochester, he returned to McGill, has been a leading teacher of geology there for the past twenty-nine years and is now the Dawson Professor.

In 1939 he was awarded the Barlow Memorial Prize of the Canadian Institute of Mining and Metallurgy, and in 1943 the Leonard Medal of the Engineering Institute of Canada.

His long list of scientific publications, by this year spanning one-third of a century, deals mainly with problems of structural geology and of mineral deposits, but includes important contributions in the fields of stratigraphy and Pleistocene geology. In the past ten years he has been a leader in the development and elucidation of the concept of the complex orogenic history and the many structural provinces of the Canadian shield. His comparison of Precambrian orogenies with the younger orogenies of the Appalachian and Cordilleran regions has been vital in the growth of modern concepts of the geological history of the Canadian shield. These

contributions are to be found in the publications of the International Geological Congress, in the Transactions of this Society, in the Proceedings of the Geological Association of Canada, and in those of the Geological Society of America. While his colleagues wish to honour him particularly for these major, broad, path-finding contributions, they also wish to pay tribute to his acknowledged leadership and professional skill, both as a scientist and as a practical consultant of highest repute, in the fields of structural geology and applied mining geology. An appreciable fraction of Canada's metal production has been won as a result of his professional skill.

From its inception in 1949, J. E. Gill has been a member of the executive committee of the National Advisory Committee on Research in the Geological Sciences. He has rendered major service for many years to the Geological Society of America, lately a member of Council and Chairman of their publications and nominating committees. The scientific publications of the Canadian Institute of Mining and Metallurgy and of the Geological Association of Canada owe much to his voluntary labour and guidance.

Mr. President, I am honoured and pleased to present Dr. James Edward Gill as recipient of the Willet G. Miller Medal.

H. C. Gunning

The Harrison Prize Award 1957

Robert George Everett Murray; Carl Franz Robinow

Some three years ago the late Professor Francis Charles St. Barbe Harrison, a former Fellow of this Society and former President of Section V, bequeathed to the Royal Society of Canada a sum the income from which was to be used for an award for meritorious Canadian work in non-medical bacteriology, the recipients to be selected by a committee appointed by Section V. The principles and regulations governing the award, to be known as the Harrison Prize, were drawn up by a committee and approved at the 1956 meeting. From various considerations it was decided that the Prize would be most appropriately awarded every three years. It is now to be awarded for the first time.

In making this first award of the Harrison Prize, the Society is taking a step that will doubtless be unusual on future occasions by making a dual award. Two bacteriologists, through their research in the field of bacterial cytology, have brought not only distinction to themselves, but honour to this country through their fundamental work on the structure and nature of the bacterial cell. Working at the same institution their researches have been intertwined—they have made investigations jointly and individually and have, as well, guided other colleagues in their endeavours to probe the nature of the microbial cell. It is most fitting that the Royal Society of Canada should give this more formal expression of the regard in which these men are held by fellow scientists.

Robert George Everett Murray was born in England, educated at Cam-

bridge and McGill Universities, graduating with distinction, not only as M.A. but also as an M.D. Following service with the Canadian Army Dr. Murray was appointed lecturer in the Department of Bacteriology and Immunology at the University of Western Ontario and in 1949 became Professor and Head of that Department, the position he now holds.

Dr. Murray's scientific vision and enquiring mind led him to the more fundamental aspects of bacteriology and his basic studies on the cell structure of bacteria. He has made notable contributions through his studies on the cytology of bacteria of different generic groups and on the cytological effects of the infection of bacteria with bacteriophage. He has contributed to an outstanding degree to the methodology for the differentiation of the components of the bacterial cell and in the use of electron microscopy for elucidating the cell structure and composition of micro-organisms.

Carl Franz Robinow, a native of Hamburg, studied medicine at the Universities of Freiburg, Berlin, Vienna and Hamburg. This was followed by intensive training in bacterial cytology in which he was to become so adept. This included two years' study with Albert Fischer at Copenhagen, seven years at the Strangeways Laboratory at Cambridge University devoted to research on the life cycle of viruses and the structure of bacteria. On coming to this continent in 1947 he spent two years as visiting lecturer on bacterial cytology at the Universities of Indiana, Washington and Yale. Since 1949 he has been at the University of Western Ontario where he is now Professor in the Department of Bacteriology and Immunology.

In his present position Dr. Robinow has done outstanding research on the nuclear structure and chromatin bodies of vegetative bacterial cells, on resting and germinating spores, and contributed much to our knowledge of spore anatomy. His contributions to the techniques of microscopy, microtomy and staining are helping bacteriologists to observe and reveal the innermost nature of the bacterial cell.

W. H. Cook

REPORTS OF SECTIONS

Rapport de la Section I

La Section I a tenu quatre réunions auxquelles ont assisté vingt-trois sociétaires: MM. Louis-Philippe Audet, Arthur Beauschesne, Benoît Brouillette, Jean Bruchési, Mlle Cécile Chabot, M. Pierre Daviault, Abbé Antoine d'Eschambault, MM. Raymond Douville, Robert Elie, Robert Gauthier, Jean-Marie Cauvreau, Paul Gouin, Maurice Lamontagne, Gustave Lanctôt, R. P. Emile Legault, M. Jean-Jacques Lefebvre, R. P. Georges-Henri Lévesque, M. Léon Lortie, Abbé Arthur Maheux, Mgr Olivier Maurault, MM. Antoine Roy, Guy Sylvestre et Adrien Plouffe.

La Section I a consacré une séance à la discussion des affaires courantes et elle a pris connaissance en tout ou en partie de seize communications. Notre Section a participé avec les autres Sections au symposium sur la « Présence de demain. »

Nous avons à déplorer la perte de trois de nos sociétaires: M. Georges Bouchard, M. Louis-Philippe Robidoux et le R. P. Georges Simard.

Nous avons accueilli cinq nouveaux membres: MM. Paul Beaulieu, Raymond Douville, Robert Gauthier, Paul Gouin et le R.P. Emile Legault.

Les élections ont donné les résultats suivants:

Président: M. Adrien Plouffe
Vice-président: R.P. Georges-Henri Lévesque
Secrétaire: M. Louis-Philippe Audet
Représentant supplémentaire au Conseil: M. Jean Bruchési
Comité général d'édition: M. Pierre Daviault
Comité général de nomination: M. Adrien Plouffe, M. Jean-Marie Gauvreau
Comité de la Médaille Chauveau: M. Adrien Plouffe, R.P. Georges-Henri Lévesque, MM. Pierre Daviault, Léon Lortie, Robert Elie, Jean-Marie Gauvreau
Comité de la Médaille Lorne Pierce: MM. Adrien Plouffe, Robert Elie, Antoine Roy
Comité de la Médaille Tyrrell: MM. Adrien Plouffe, Guy Sylvestre, Antoine Roy
Comité des candidatures (nouveaux membres): Président, M. Adrien Plouffe; R.P. Georges-Henri Lévesque, MM. Jean-Charles Bonenfant, Pierre Daviault, Guy Sylvestre, Louis-Philippe Audet, Benoît Brouillette, Jean-Marie Gauvreau
Comité des bourses: Président: M. Maurice Lebel; M. Jean Bruchési, R.P. Georges-Henri Lévesque, M. Pierre Daviault et le R.P. Louis-Marie Régis
Comité du programme: Président: M. Léon Lortie; R.P. Georges-Henri Lévesque et le R.P. Emile Legault

Comité des projets: M. Léon Lortie
Comité d'organisation: M. Pierre Daviault
Comité des publications: M. Pierre Daviault
L'Editeur: M. Louis-Philippe Audet

Il est proposé par Adrien Plouffe, appuyé par Léon Lortie, que le rapport de la Section I soit adopté.

Report of Section II

Section II held two business meetings and one general session. Fifty-seven Fellows attended.

The following officers were elected:

President: F. H. Underhill
Vice-President: V. W. Bladen
Secretary: S. D. Clark
Additional Member of Council: G. E. Britnell
Editorial Committee: G. E. Britnell (*Ch.*), S. D. Clark, Hilda Neatby, M. M. Ross
General Nominating Committee: G. A. Elliott, A. S. P. Woodhouse
Medal Committee:
Lorne Pierce Medal: F. H. Underhill, V. W. Bladen, F. M. Salter
Tyrrell Medal: F. H. Underhill, V. W. Bladen, V. C. Fowke
Advisory Committee (New Fellows): V. W. Bladen (*Chairman*), F. H. Underhill, S. D. Clark, A. G. Bailey, Roy Daniells, J. A. Corry, W. E. Collins, W. L. Morton
Scholarship Committee: F. E. L. Priestley (*Chairman*), W. K. Lamb, M. Timlin
Programme Committee: G. E. Britnell (*Chairman*), S. D. Clark, H. Neatby, M. M. Ross

The Report of Council was accepted.

The Section noted with deep regret the deaths of O. H. Todd, C. T. Currelly, and W. Bovey.

The Section noted the transfer to the retired list of D. A. MacGibbon, J. E. Pratt, and D. Leechman.

The Section expressed itself in favour of the dates June 2–3–4 as the time for the 1958 meeting in Edmonton.

The Section favoured the establishment for the coming year of an over-all programme committee.

It was moved by S. D. Clark, seconded by W. K. Lamb, that this report be adopted.

Report of Section III

This year the Section concentrated its activities toward participation in the Society's symposium on "Our Debt to the Future," which had been organized by our 1956 President W. H. Watson. The following Fellows of Section III participated in the formal discussions of this symposium: R. H. F. Manske, E. W. R. Steacie, L. M. Pidgeon, W. B. Lewis, W. H. Watson.

In addition, the Section held a symposium of its own on the topic of "Symmetry." This included the presidential address by H. S. M. Coxeter, and papers by W. Opechowski and G. F. Wright. The remaining time was devoted to one session of contributed papers and the two business meetings of the Section.

At the first business meeting the Section welcomed its 6 new Fellows:

Dr. G. C. Benson	Associate Research Chemist, Division of Pure Chemistry, National Research Council, Ottawa
Dr. R. U. Lemieux	Professor and Chairman of Chemistry Dept., University of Ottawa
Dr. N. S. Mendelsohn	Professor, Dept. of Mathematics and Astronomy, University of Manitoba
Mr. A. G. Ward	Senior Research Officer, Atomic Energy of Canada Ltd., Chalk River, Ontario
Dr. K. Wiesner	Prof. of Organic Chemistry, University of New Brunswick
Dr. Ta-You Wu	Senior Research Officer, Division of Pure Physics, National Research Council, Ottawa

The Section noted with deep regret the deaths of two of its members—C. A. Chant and R. E. Delury—and paid a silent tribute to their memory.

The Section formally accepted the report of Council. It strongly supported the proposed dates of June 2–4, 1958, for the next annual meeting. The President and Vice-President were appointed to act as sectional representatives on any general programme committee for the Society, if such should be desired by Council.

At the second business meeting the following officers and committee members were elected:

President: Léo Marion
Vice-President: G. M. Shrum
Secretary: A. D. Misener
Additional Member of Council: H. S. M. Coxeter
Tory Medal Committee: Nil (no award)
Committee for Selection of New Fellows: Officers of the Section D. C. Rose, G. de B. Robinson, P. A. Giguère
Sectional Editorial Committee: W. H. Watson, T. Thorvaldson, G. de B. Robinson

Members of the General Nominating Committee: LÉO MARION, G. M. SHRUM

Committee for Award of Royal Society Research Fellowships: R. L. JEFFERY, P. A. GIGUÈRE, B. W. CURRIE, HELEN S. HOGG

Programme Committee: Officers of Section (Léo Marion, G. M. Shrum, A. D. Misener), with power to add

Representatives on the Editorial Board of the Canadian Journals of Research: H. E. DUCKWORTH, D. J. LEROY

Representative on the C. I. C. Medal Committee: H. G. THODE

Representative on the Canadian National Committee of the International Union of Pure and Applied Chemistry: A. N. CAMPBELL

Representative on the Canadian National Committee of the International Union of Pure and Applied Physics: A. D. MISENER

Representatives on the Canadian National Committee of the International Astronomical Union: B. W. CURRIE, HELEN S. HOGG, ANDREW THOMSON

The form and purpose of future sectional meetings was vigorously discussed. Although no specific recommendations on this crucial topic were prepared for presentation to the Society, the sectional programme committee was considerably enlightened. The sectional representatives to the Society's Publication Committee were instructed but not burdened with restrictive directives.

REPORT OF SECTION IV

Section IV held three sessions, including one business session, one Symposium on Hydrology and one session on independent papers. The sessions were attended by as many as 60 Fellows and guests.

The Section noted with deep regret the death during the past year of one of its retired Fellows, A. L. Parsons.

Four new Fellows, H. S. Armstrong, R. W. Boyle, C. O. Hage and W. H. Mathews were elected and presented to the Society, W. H. Mathews in absentia.

The following officers and representatives were elected for the Section for 1957–58:

President: H. C. RICKABY

Vice-President: L. S. RUSSELL

Secretary: S. C. ROBINSON

Additional Member of Council: H. C. GUNNING

Editorial Committee: T. H. CLARK *(Chairman)*, S. C. ROBINSON *(Secretary)*, and the other members to be chosen from among the Fellows of the Section at McGill University.

General Nominating Committee: J. E. Gill, M. Y. Williams
The Willet G. Miller Medal Committee: F. F. Osborne *(Chairman)*, A. R. Byers, J. S. Stevenson, J. F. Caley, and P. S. Warren. This Committee will decide the award of the medal in 1959.
Advisory Committee for new Fellows: J. S. Stevenson *(Chairman)*, G. V. Douglas, G. M. Brownell, J. W. Ambrose, J. T. Wilson, J. B. Mawdsley, R. F. Legget, S. C. Robinson *(Secretary)*.
Selection Committee for Research Scholarships: E. S. Moore *(Chairman)*, H. J. Fraser, I. W. Jones
Programme Committee: J. E. Gill *(Chairman)*, R. E. Folinsbee, R. F. Legget and J. E. Hawley

The acceptance of the requests of J. A. Bancroft, G. Hanson and C. W. Knight to be placed on the retired list is recommended to Council.

The Section accepts the Report of Council.

The Section unanimously supported the holding of the Annual Meeting at Edmonton during the week of June 2nd or even earlier, in the end of May.

R. E. Folinsbee was elected to be the local representative for the Section and Programme Committee in matters connected with the Annual Meeting in Edmonton.

It was moved by H. S. Bostock, seconded by M. Y. Williams that this report be accepted.

Report of Section V

The Section held two business meetings, participated in the symposium sessions and on Tuesday June 11th held a sectional meeting at which was presented the Presidential address "Research in the Biosciences" by W. H. Cook. A posthumous address of Dr. Lyman Duff, the 1956 Flavelle Medallist "The Aeteology and Pathogenesis of Atherosclerosis" was read by Vice-President W. R. Campbell, and the 1957 Flavelle Medal address "Parasitology in the Arctic" by T. W. M. Cameron.

The Section welcomed six new members, approved the report of Council, noted with regret the transfer of Dr. W. H. Brittain to the retired list, and stood for a moment of silence in respect to its deceased Fellows Lyman Duff and S. A. Whitnall. The Section endorsed the principle of an over-all planning committee for the Society. The Section was almost equally divided on the relative merits of the first or second week of June for the 1958 annual meeting though the earlier date was given one vote more than the latter; the closeness of this section's opinions on this matter is drawn to the attention of the Society.

The Section discussed the matter of programme planning and publication and appointed a standing committee of E. G. D. Murray, P. Dansereau and

T. W. M. Cameron with powers to add to act with the local programme committee appointed annually to deal with these matters. The policy with respect to publications was left to this committee but it was felt that the future of the Transactions was somewhat uncertain, and in this connection it was noted that we have an extensive exchange list with other societies and this must be taken into consideration in future policy.

The following officers and committee members were elected for the 1957–58 session:

President: W. R. CAMPBELL
Vice-President: N. H. GRACE
Secretary: J. GIBBARD
Additional Member of Council: W. H. COOK
Editorial Committee: E. HORNE CRAIGIE *(Chairman)*, H. B. SIFTON, A. FRAPPIER
General Nominating Committee: A. G. HUNTSMAN, W. P. THOMPSON
Medal Committee, Flavelle Medal: To retire in 1958, R. F. SHANER, J. A. DAUPHINEE *(Chairman)*, M. W. BANNAN; To retire in 1959, A. W. NEEDLER, F. C. MACINTOSH, L. P. DUGAL
Advisory Committee (New Fellows): To retire in 1958, W. R. CAMPBELL, P. DANSEREAU; To retire in 1959, I. MCTAGGART COWAN, K. FISHER *(Chairman)*; To retire in 1960, M. J. DUNBAR, H. A. SENN, and the Secretary
Scholarship Committee: D. L. THOMSON *(Chairman)*, R. POMERLEAU, W. A. CLEMENS, R. J. ROSSITER
Programme Committee: R. F. SHANER *(Chairman)*, E. H. MOSS, D. S. RAWSON
Representatives on Editorial Board, Canadian Journal of Research: D. L. BAILEY, T. W. M. CAMERON

APPENDIX A

DISCOURS PRÉSIDENTIEL
PRESIDENTIAL ADDRESS

PROCEEDINGS OF THE ROYAL SOCIETY OF CANADA

VOLUME LI : SERIES III : JUNE, 1957

DISCOURS PRÉSIDENTIEL PRESIDENTIAL ADDRESS

These Seventy-Five Years

W. A. MACKINTOSH, F.R.S.C.

IL y a soixante-quinze ans se réunissaient sous le haut patronage du Marquis de Lorne les premiers membres de cette Société. En cette année-là, le vingt-cinq mai, dans cette ville même, dans la salle de la Commission des chemins de fer de la vieille Chambre des Communes eurent lieu les premières séances de cette Société et de ses sections.

Malgré ce début modeste une grande foi animait cette Société. Notre premier Président, Sir William Dawson, dit alors : « We see only the rudiments and the beginnings of things, but if these are healthy and growing, we should regard them with hope, should cherish and nurture them as the germs of greater things in the future. »

C'est ainsi que s'exprima l'éminent géologue. Il était bon aussi que le distingué vice-président, l'honorable Dr. Chauveau, rappelât : « Il y a longtemps, bien longtemps, que l'on fait de nobles efforts pour la culture de l'esprit humain, sur les rives du Saint Laurent. »

Depuis soixante-quinze ans bien des choses ont été accomplies dans le domaine des lettres et des sciences dans ce pays. Nul d'entre nous n'oserait prétendre que la Société Royale ait été la seule influence ou même l'influence dominante dans le développement de notre culture nationale. D'autre part, on ne saurait surestimer l'importance de ces réunions d'érudits et de savants pour l'établissement d'objectifs élevés et pour l'encouragement apporté à ceux qui, sans elle, travailleraient dans l'isolement.

Ce n'est pas le moindre titre de gloire de cette Société que d'avoir assuré une étroite collaboration fondée sur le respect mutuel et sur une compréhension sans cesse plus profonde dans tous les domaines des belles-lettres, des sciences et de l'érudition, entre ceux qui pensent et s'expriment en français et ceux qui pensent et s'expriment en anglais.

Notre collaboration devient de plus en plus confiante à mesure que nous reconnaissons mieux que la culture s'élève au-dessus des frontières nationales et raciales tout en pénétrant plus profondément par ses racines dans notre patrimoine canadien.

The greater part of the programme of the 1957 meetings of the Royal Society of Canada is devoted to *Our Debt to the Future*. We look before and after at the interim and final reports of the Royal Commission on Canada's Economic Prospects. With such notable groups of Canadians

poised, each with hand raised to shade his eyes, straining like Lief Ericson to discern what breaks the horizon of the future, the President is left free to turn his attention to the past. He does this not with any intention of recalling the triumphs and defeats of this society but in the hope of gaining some deeper insight into present and future. All history, said Croce, is contemporaneous. The trick of the historian is to discern what of the past is relevant to the present and not to be misled into accepting a reflection of the present for history.

My way has been made easy by the government which, either because it recognized time as a dimension or by inadvertence, has made such temporal arrangements that as I speak the turning earth draws a curtain of silence from east to west over the contentious issues of the day. None but the most perceptive and least impetuous of the British Columbians could be influenced in his electoral choice by anything which I say. These fortunate circumstances relieve me from genuine anxiety. I might, for example, have quoted in innocent piety, a sentence from the first President's address—"A locust, a midge, or a parasitic fungus may suddenly reduce to naught the calculations of a finance minister." How could I have convinced my hearers a few hours ago that I was not, by this indirect means, referring to the much discussed contemporary phenomenon of the federal surplus repeatedly outguessing successive finance ministers? How could I have been sure that some inflamed supporter or rabid opponent of the government of the day did not find in this innocent sentence of a guileless scientist scurrilous references to our three loyal oppositions? But I am freed from all such fears.*

The Royal Society of Canada is a society of persons and was founded by persons. It is clear that without the initiative and vision of the Marquis of Lorne the society would not have been established. No doubt, on his part it was something of a missionary effort in a pioneer country, and perhaps as a Campbell he was concerned for the future of a country under the government of a Macdonald. Yet we have reason to be grateful to him for the achievement and the precedent. We have reason also to be grateful to such successors as Grey and Tweedsmuir who made powerful contributions to the intellectual life of this country. We have cause for very special gratitude to our Honorary Patron, His Excellency, our present Governor-General, who has worked so assiduously and with such perception for the strengthening of the intellectual and cultural life of this country and who has the satisfaction of seeing a growing number of the recommendations of the Commission over which he presided put into effect and bear fruit.

But the Marquis of Lorne did not work with unlettered pioneers. As Lawrence Burpee wrote twenty-five years ago:

> One need only think of what Sir William Dawson meant to McGill, Sir Daniel Wilson to Toronto, and George M. Grant to Queen's, of what the Geological Survey owes to George Dawson, the Meteorological Service to Charles Carpmael and the Dominion Experimental Farms to Saunders, of Osler's achieve-

*This address was given in the evening of the day of the federal elections of 1957.

ments in medicine, Macoun's in botany, and Sandford Fleming's in engineering, and of the contributions to Canadian literature of the poets, Frechette and LeMay, the historians Sulte and Verreau, and the novelists Kirby and Marmette, to realize that the Royal Society counted among its charter members a number of men of unusual ability and force of character.

Neither did the first Patron of this Society work outside the circumstances of his time. In Britain the Victorian era was in late harvest. George Eliot and Clerk Maxwell had died recently. The lives of Carlyle, Darwin and Disraeli were to end in 1881 and 1882. Browning, Matthew Arnold, Tennyson were living figures even though their work was nearly done. Gladstone had still to re-emerge for his final act. Sir John Clapham's "age of free trade and steel" was yielding its fruits.

The United States had turned its back on the civil war and was concerned with successive transcontinental railways, the agrarian revolt, free silver and the integration of Lake Superior iron and Pennsylvania coal. New England glowed mildly in its "Indian Summer." Parkman had already published his *Frontenac*, *The Old Régime* and *Lasalle*.

In Canada, the project of Confederation was incomplete. The political structure had been breached by Mowat and in great measure transformed by the decisions of the Judicial Committee of the Privy Council. The West had been acquired but was still empty, as Edward Blake monotonously repeated. More than seventy-six percent of the population was in Ontario and Quebec: only four percent was west of Ontario. The National Policy had been launched but Tupper did not complete it till 1887. Confederation was a daring, indeed desperate, project of nation building with most unlikely and ill-matched materials. In 1882, even the beginning of success was in the future.

And yet now and then there was a promise of sunshine. The bold project of the Canadian Pacific Railway was put together in 1880 and, after a hesitating start, was executed with great vigour. It was made possible by, and in some measure created a brief, buoyant wave of expansion. Canadian exports reached their peak for the decade in 1882. Imports reached figures in 1882–83 which they did not again achieve till 1898. Immigration which had been 26,000 in 1876 rose to 112,000 in 1882 and 134,000 in 1883, figures which might command respect even in the present decade.

With the railway in prospect, the Homestead Act began to function. Homestead entries in the west rose from a pitiful 350 in 1876 to a sanguine 7,000 in 1882. Winnipeg opened its first grain exchange in 1881 and in 1883 there was a record export of more than 8,000,000 bushels of wheat and flour. George Stephen had brought in those great captains of men and mules, Van Horne and Shaughnessy, to drive ahead the lagging construction of the Canadian Pacific. Something of what John Macoun and G. M. Grant had predicted seemed to be coming true west of the Great Lakes.

And yet it was a false start. Almost immediately the price of wheat fell disastrously. After the first promising crops came the other three destroyers—

frost, the grasshopper and drought. The first Winnipeg Grain Exchange closed its doors. In 1889 Canada consumed more wheat than she produced. The Northern Pacific, in some degree the prototype for the Canadian Pacific, went bankrupt in 1883. In the United States and England, the years from 1884 to 1896, were labelled "depression" or "deep depression" except for brief and feverish revivals around 1890.

It may well be that had the Royal Society of Canada not been planned and launched in 1881 and 1882, it might have waited another fifteen or twenty years to appear.

These seventy-five years between the founding of the Royal Society of Canada and the setting-up of the Canada Council have been years of great but uneven growth—years bristling with political and economic difficulties. Now that every Canadian can tell glibly just what our population and national product will be in 1980, there is some profit in looking back at some of the obstacles which have been surmounted.

Sir Wilfrid Laurier, and several others, are reported to have said that Canada was a difficult country to govern and it is easy to understand the difficulties inherent in our distances, our two languages and diverse origins. (It is well to remember, however, that just as a man about town may eat out on a slender stock of other people's stories, many a Canadian politician has made a career of other people's prejudices and misconceptions.) Sir John Macdonald might well have said that Canada was a difficult country to put together. It was not clear when he died, 288 years after the first settlement, that what he had put together could live and develop into a national unit.

Some obvious divisive forces of climate, distance and of language and religion, are important but not decisive. A major geographic and economic obstacle of historic importance has been the lack of adequate hinterlands for the St. Lawrence and for the Atlantic ports. The Atlantic harbours have been disproportionately large and commodious for any hinterland which could be made tributary to them despite railway building, freight subsidies and preferential duties for direct Commonwealth shipments. Throughout much of our history, the noble St. Lawrence has been a rather pathetic river in search of a hinterland.

The development of Canada, as of the rest of North America, was an extension of the trade area of the European metropolises. In this the St. Lawrence, the conspicuous eastern gateway seemed to be of central importance. Indeed, without the St. Lawrence and some vision of its continental rôle, there could have been no Canada, or to put it more cautiously, it would have been a totally different and probably never an independent country. It was Lasalle and Frontenac, who, turning their backs on the sea and its fish, saw North America as a continent with its greatest resources in the interior and the St. Lawrence as an instrument of imperial strategy. They saw too that the most accessible and valuable hinterland of this river

and its lakes lay to the south in the area between the Ohio and the Mississippi.

This was the territory which our French-speaking forerunners were unable to withhold from the British armies based on the American colonies. This was the area which the British imperial power retained in the province of Quebec in 1774 only to relinquish it in 1783. This was the area which, as Professor Creighton has told so well, the Montreal merchants tried desperately to bind economically to the St. Lawrence in a long period which finally came to an inglorious full stop when the Grand Trunk rolled ineffectively and unnoticed into Chicago in 1880.

Lasalle's project of empire, an attempt to control the interior through control of the river, was almost certainly foredoomed to failure. The St. Lawrence valley itself could not generate and maintain the necessary weight of population to control the interior. Had the St. Lawrence remained the only traffic outlet from the Great Lakes, it would at some juncture have been taken over by the United States just as surely as Andrew Jackson defeated John Quincy Adams for the Presidency. What relieved the pressure and diverted the interest of the United States before the weight of her population became overpowering was the building of the Erie Canal, linking the Great Lakes to a warm-water port, avoiding Niagara and the St. Lawrence Rapids. In 1774, the Canadians held the river, nearly the whole of the Great Lakes and the essential hinterland. In 1825, the United States held the hinterland and was populating it at an awesome rate. It had joint ownership of the Great Lakes. It had provided an eastern gateway which, at the time, had decided advantages over the St. Lawrence. Small wonder that the United States was less interested in Canada than in the territories beyond the Mississippi.

The area between the Ohio and the Mississippi was the old Northwest territory. The settlement of Tennessee and Kentucky and the Old Southwest had preceded but Ohio became a state in 1803, Indiana in 1816, Illinois in 1818 and Michigan in 1837. Here was the area of agricultural land which Canada lacked, suited to the technical knowledge of the day, ready to yield its wealth to the axe, the plough and the simple household arts. It quickly supported a weight of population which gave point to Henry Clay's "American System" by providing a market for manufactures, generating demands for transportation facilities and ultimately tipping the balance in the Civil War. If the existence of this area was important in the history of the United States, the lack of it was crucial in Canadian development. The territory north of the St. Lawrence and the Great Lakes, narrowed by climate and reduced drastically by the Canadian Shield, offered no comparable pioneer farm area and few other resources for which there was market need or knowledge to exploit.

What may seem to you a sketchy digression into the history of the United States is not as irrelevant as it would appear. There was not in 1882, despite

the new Royal Society of Canada, a viable Canadian economy capable of a national integration and differentiation of function. If I may simplify the economic facts, while not denying the influence of manifold other forces, there was a fatal lack of adequate agricultural and other resources suited to the markets and technical knowledge of the day. There was also lacking the technical knowledge to create markets and to convert useless space into valuable resources. The territory between the Ohio and the Mississippi was rich in the resources amenable to contemporary skills and knowledge and capable of supporting decisive densities of population—arable land in large continuous areas, coal, iron and oil. In 1882, Canada had uncertainly in hand a great nation-building project which had as yet yielded only discouraging results and whose success in the future was highly uncertain. Looked at from one point of view the project was to find and develop within Canadian boundaries resources equivalent to those lost in 1783 or to use different words it was to find an adequate hinterland for the St. Lawrence.

The settlement of the Prairie Provinces was made possible by such Canadian achievements as the building of the Canadian Pacific and the discovery and development of early maturing wheats. It was made feasible by external shifts in prices and costs which reflected the greater economy of overseas cereals in an industrialized Britain. It needed also a host of innovations borrowed chiefly from the United States. This settlement was the first rapid and massive movement toward a Canadian economy. In twenty years the population of Canada increased by nearly two thirds. Improved farm land increased one and one third times. The St. Lawrence added a huge farming area to its hinterland and acquired its first massive Canadian traffic other than timber. In 1889 Canada consumed more wheat than she produced. When settlement was complete she was supplying 40 per cent of the world's wheat exports.

After the conquest of wheat came the conquest of newsprint and power. The growth of the metropolitan press and the inadequacy of United States sources of power and soft wood produced the unlikely phenomenon of a Republican Congress removing the duty on newsprint in 1910. Climate, glacier and beaver had combined to produce spruce and water storage in hitherto undeveloped areas of the Canadian Shield. Improvements in the generation and transmission of electricity gave further advantages to water power in an industry which is lavish in its use of mechanical power per worker. In twenty years the industry became our second major exporter. While not confined to the St. Lawrence Valley, it gave the St. Lawrence its second great hinterland.

The gold mining industry for a time contributed the third of the great exports and deepened the hinterland of the St. Lawrence. Its rise and expansion were, however, to a degree fortuitous both in discovery and in the revaluation of gold in 1933.

The rapid expansion of base-metal production which began in the 1920's

again followed a familiar pattern. The decline of competitive sources of supply and the invention of new technical means of recovering metal from complex ores were the roots of its growth. Increasingly, markets and knowledge, time and applied science, furnished the basis for investment.

It has been convenient to relate developments to the historical setting of the St. Lawrence Valley and they still have great relevance. But the simplicity of that pattern had long since been broken. The availability of the Panama Canal by 1920 re-oriented or more correctly re-occidented British Columbia. Her coastal resources, accessible to Europe and the Atlantic coast became more valuable than her inland resources marketable in the prairie provinces. The greater importance of her market gave direct stimulus to other regions.

In the years since World War II there has been an astonishing increase in the speed and mass of development but no conspicuous change in pattern. Despite tremendous changes, we are still developing, as we were at the beginning of the century, great bulk exports albeit with an increasing amount of processing and refinement. We are still dependent on markets abroad. We are still the field for investment of great sums of external capital.

The great expansion of this country in the past twelve years, whether we look on it with admiration or dismay, has been stimulated and conditioned by a number of circumstances which have historical significance. I shall not seek to explain or account for the great rise in Canadian and western population which has taken place in utter disrespect of the once-hallowed logistic curve and to the humiliation of demographers. I shall merely list briefly some of the circumstances of economic growth which seem to me to be relevant and illuminating. First, of course, the low capital investment of the preceding fifteen years of depression and war had built up a deficit which was waiting to be filled. Second, the enormous increase in the material intake of modern (particularly United States) industry produced immediate and prospective markets for materials and conspicuously for metals. For these markets, the customary but declining sources could not long be adequate. Third, technical advances in the means of discovering, mining, extracting and treating metallic ores made possible the discovery of unsuspected resources and the use of hitherto unusable resources.

Just as Canada, having built a transcontinental railway, had to wait for favourable markets, for early-maturing wheat, for improved methods before she achieved success in establishing prairie agriculture, so we had to wait until markets and methods had caught up with our other resources. True, there has been some good luck, but it has been rather in the extent of the resources than in their discovery.

The fact that our recently tapped resources of iron, nickel, copper, uranium, oil, natural gas and water power are mainly in unpopulated or thinly populated parts of this country has historic significance. The hinterlands of the St. Lawrence system and of Canadian metropolises have been widened

and deepened. There is a kind of historic justice in the fact that between 1882 and 1957, we have found within our own boundaries, the equivalent of the rich farm land, the iron and the oil which lay in the triangle between the Ohio and the Mississippi. We have found also an abundance of uranium which may remove the penalty of our ill-located coal resources. The Canadian economy, which appeared viable in 1882 only to the most stubbornly optimistic, has in 1957 an assured life though one which we may be certain will not be without its vicissitudes. It is significant also that once more the St. Lawrence is one of the centres of attention, not merely because its new hinterlands demand it as an outlet and for the interchange of their products but because the old hinterland requires the import of materials to supplement its waning resources and power to serve its enlarged needs for energy.

But there are matters of even greater import than these material advances. Canada is in a new era not only because the Royal Society of Canada has been in existence for seventy-five years, nor yet because the Canada Council has been established, not because the Royal Commission on Canada's Economic Prospects has produced exhilarating statistics as difficult to believe as a compound interest table, and not alone because the St. Lawrence is about to resume its historic Canadian rôle.

We are in a new era because we are as a people meeting challenges which we have not met in such force before or the nature of which we are now better able to recognize. Our life is no longer shaped by the deficiencies of the past but by the opportunities of the future. But unless we have learned from the past, we shall not understand the opportunities.

Let me mention, as illustrations, two or three areas of significance and concern. The development of the northern half of this continent has been delayed so long because it required a level of industrial and urban civilization, a degree of technical knowledge, a massing of capital which did not earlier exist. It is not so long ago, though in another age, that the late Griffith Taylor envisaged and even advocated the northern extension of settlement by a tough peasantry asking nothing but space, adequate rainfall and freedom to multiply. Nothing could be clearer in the light of today's experience than that the development of the north will proceed, if it does proceed, not by peasant shrewdness and endurance but by accurate technical knowledge and skill, by the products of applied science, the aeroplane, radar, the magnetometer, the tractor. The exploitation of its resources will require massive investment, highly technical equipment, and skilled application and direction. Canada requires for its development not a lower but a higher intellectual capacity than most others. What we face is not material ease but intellectual and moral challenge.

The necessity of scientific training and capacity are at the moment obvious. Less obvious but equally necessary are other types of learning and skill. Canada will continue to be a difficult country to govern, but the chief difficulties of the future will not spring, I suspect, from our differing cultural,

religious and linguistic origins. It is evident that this country will embrace vastly greater metropolitan centres with intractable problems of physical organization and political accommodation. It is equally evident that we shall have to the north a perpetual frontier with scattered and shifting concentrations of population. Metropolis and frontier will be linked by many cultural, political and religious ties but also by powerful corporate and union organizations. It is going to take informed understanding, real knowledge of social, economic and political problems to combine freedom, order and change in such a country. The slogans and the appeals to the prejudices of the past will have lost their relevance. The translation of the commonplace into the jargon of the seminar room will not meet the requirements.

Let me mention another area of concern. At times in our history we have been nervously concerned with the attitudes and intentions of the United States alternately seeing a pattern to be followed or a fate to be shunned. As for political absorption, the fact is that seldom if ever did we offer any serious temptation. With our growing population and national integration and in today's climate of opinion, no one but an occasional angry congressman thinks of it.

There is at present in this country a widespread alertness to the dangers of economic and cultural absorption. Certainly United States capital has acquired controlling ownership in wide sectors of our industry and natural resources. United States union organization has achieved varying degrees of dominance in Canadian industry. Ownership is, of course, exercised and operations carried on within Canadian laws. And yet there is an area here for alertness though not for alarm.

In organization and practice, United States corporations in Canada fall roughly into two classes. There are those which in their Canadian subsidiaries offer minority stockholdings for Canadian purchase; establish Canadian boards of directors which are more than advisory boards; offer opportunities to Canadian executives; develop research centres in this country and participate as Canadian companies in the pattern of Canadian life. In contrast, there are others which, though dominant in their industry, operate branch plants or offices in Canada in the same way in which they would operate a branch in Wichita or Oshkosh. Decisions and research are localized in United States centres. Policies which may be relevant enough in the United States transfer to Canada attitudes toward government, education and community life which are foreign to Canadian thinking. It seems probable to me that it was the missionary ancestors of the directors of these corporations who put the island natives into Mother Hubbard dresses. There is in this country a strong tide of informed judgment which favours the first type of corporate organization and policy and is increasingly resistant to the second.

It is also characteristic of this present era that there is a widespread, though uneven, alertness to the threats to, or the lack of, Canadian culture.

A national culture is not a direct object of endeavour. It is not created as a gown by a designer. It is a by-product. Further, a country can have a truly national culture, incredibly bad. Canadians should aim at what is excellent intellectually, aesthetically, socially. If it is real, it will ultimately prove to be Canadian but its justification will be that it is excellent. The destroying sin is imitation. Writing or painting or music is no better because it is Canadian. Its virtue must be that it has reality, integrity and gives insight into great experience. Much of that experience will be recognizably Canadian, because we now have a Canadian experience which is coherent. If we give opportunity and encouragement to what is first-rate in our own experience, achievement and talent, we shall be protected against second-rate borrowings from larger countries.

The seventy-fifth anniversary of the founding of the Royal Society of Canada, the institution of the Canada Council, the ninetieth anniversary of Confederation, the reconstruction of the St. Lawrence Waterway are all interwoven strands in the emerging pattern of a Canadian economy and nationality. These seventy-five years have proved and made greater the vital national importance of all that a society of letters, philosophy and science represents in Canadian life.

APPENDIX B

BIOGRAPHICAL SKETCHES OF DECEASED MEMBERS

Wilfrid Bovey

1882–1956

LIEUTENANT-COLONEL the Hon. Wilfrid Bovey, O.B.E., Q.C., LL.B., D.Litt., F.R.S.C., M.L.C., who died on Oct. 11, 1956, was born on Dec. 13, 1882, the eldest son of Dean Henry T. Bovey of the Faculty of Applied Science, McGill University, Montreal. After taking his B.A. at McGill, with Honours in Classics, in 1903, and attending at Trinity Hall, Cambridge, he was called to the Bar (Inner Temple) in England in 1906.

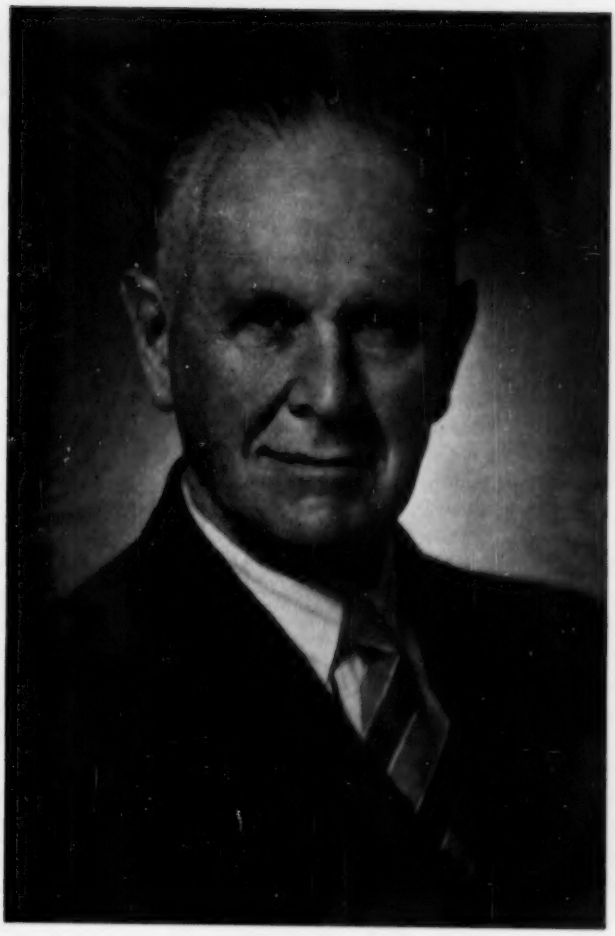
During the First World War he was militia officer of the Black Watch (Royal Highlanders of Canada); served on the staff of C.E.F. in England and France; received the O.B.E. and was mentioned in despatches several times. In 1919 he returned to Canada as Lieutenant-Colonel, and became Dominion Honorary Counsellor on Education for the Canadian Legion, and subsequently was made Officier de la Légion d'honneur, Reconnaissance française.

He then continued the practice of Law until 1923, when he became Secretary to Sir Arthur Currie, Principal of McGill University. From 1927 to 1948 he was Director of Extra-mural Relations, in charge of Extension courses, and greatly expanded this Department until his retirement in 1948.

He devoted a great deal of his time to cultural and welfare activities. He became Chairman of a Royal Commission on Veterans' Qualifications after the Second War; President of the Canadian Handicrafts Guild; President of the Reddy Memorial Hospital; Vice-President of the Canadian Society for Commercial Education, and also of the Montreal Symphony Orchestra; member of the Board of Governors of Radio-Canada; Advisory Board of W.V.S.; served as Director of the Department of Education of the Montreal Board of Trade (1929–39); and from 1942 was a member of the Legislative Council of the Province of Quebec (Liberal).

He wrote numerous articles on educational, national, and historical subjects. His book *Canadien* won the David Prize in 1923. *French Canadians Today*, 1938, was popular with both French and English readers. He also wrote on *Life Insurance Law* and contributed to the *Encyclopedia of Canada* articles on the War. Much time was given to the welfare of the Canadian Legion. In World War II he organized the Canadian Legion Educational Services which was the largest educational organization in the world. In 1955 he was presented by Lord Mountbatten with the Legion's Meritorious Service Medal.

G. R. LOMER



Wilfrid Bovey

Clarence Augustus Chant

1865–1956

CLARENCE AUGUSTUS CHANT, Professor Emeritus of Astrophysics and Director Emeritus of the David Dunlap Observatory, came to the end of his long and notable life on November 18, 1956, at the age of ninety-one. Professor Chant's life was one of outstanding devotion to astronomy in Canada, with special emphasis on astronomy at the University of Toronto. He is universally acknowledged as the father of Canadian astronomy.

He was born on May 31, 1865, in York County, Ontario, the son of the late Christopher Hull Chant of Somerset, England, and Elizabeth Croft Chant of Markham Township. After attending Markham High School and St. Catharine's Collegiate Institute he graduated in 1890 from University College, Toronto, and joined the staff there in 1891. He received his M.A. there in 1900 and his Ph.D. at Harvard in 1901.

In his early work in physics, he was a pioneer in the application of taking X-ray photographs when on February 11, 1896, he took a shadow picture of a woman's wrist with a splinter in it. This was followed a few days later by another picture of a woman's foot in which a steel needle was found and successfully removed. He also had the distinction of directing the operations when the first wireless message was sent in Canada. He was preparing a lecture on Wireless Telegraphy for the Royal Canadian Institute. In preparation for this, with the help of G. R. Anderson, a message was sent from one side to the other of the big lecture room in the west end of University College, on November 23, 1899.

Although his early interest at the University was physics, by 1904 he had succeeded in laying the framework for a department of astro-physics, which later became the department of astronomy, with Professor Chant as its head. Trained in this department have been most of the Canadian astronomers of the last few decades, including five directors of the large Canadian observatories. Among the activities of the department was the participation by Dr. Chant in five solar eclipse expeditions, of which that to Australia with Dr. R. K. Young in 1922 obtained important material on the Einstein deflection of starlight.

Until the time of his death he maintained his interest and pride in his former students, many of whom had made notable achievements. His lucidity of teaching was embodied in his numerous writings which have been enjoyed by hundreds of thousands of persons in this country. Students will remember him as co-author with F. W. Merchant of *High School Physics* and *Mechanics for the Upper School*, and with Dr. E. F. Burton of *A Text Book of College Physics*. His popular book on astronomy, *Our Wonderful Universe*, has had a wide audience. It has appeared in three editions in

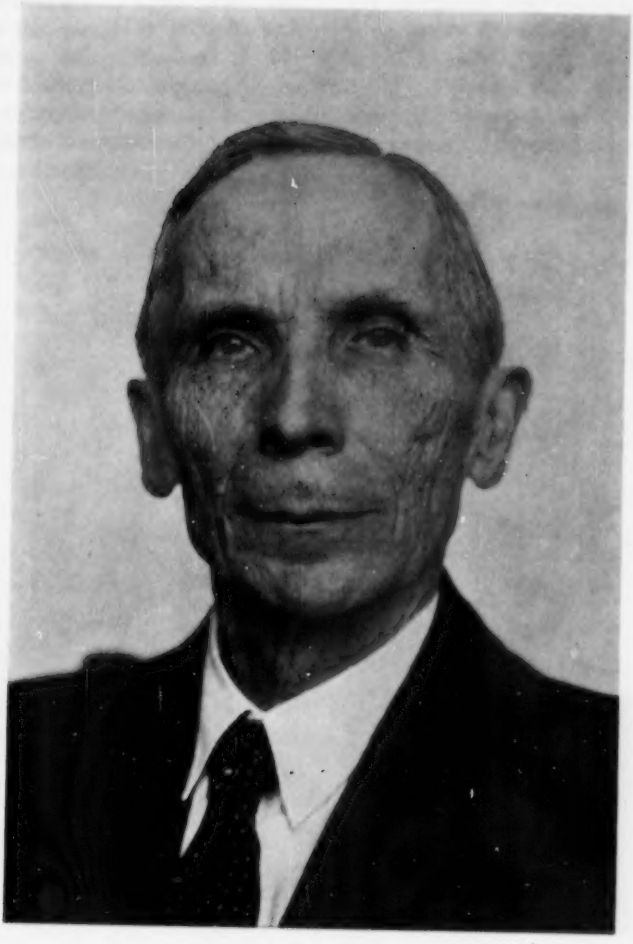
English, and has also been translated into five foreign language editions. His later years were spent in writing a detailed account of his long life, a section of which has been published as *Astronomy in the University of Toronto*.

In his early years at the university, Dr. Chant became interested in the Astronomical and Physical Society of Toronto. Largely through his efforts this society expanded to become the Royal Astronomical Society of Canada, with thirteen centres in twelve cities in this country, from coast to coast. The Society has about 2400 members, one-quarter of whom are outside Canada. The motto of the Society, "Quo Ducit Urania," as inscribed on the Society's seal designed by his daughter Etta, seemed to be a keynote of his life. In 1907, the *Journal* of the Society was started, on a monthly basis, with Dr. Chant as editor. It is remarkable that at the time of his death the last issue of volume 50 of the *Journal* was in press. A record of fifty years of continuous service as editor of a scientific publication may very well be unique in the annals of astronomy. Also in 1907 under Dr. Chant's editorship, *The Observer's Handbook* was established, and the 49th annual issue had just appeared at the time of his death. These two publications have contributed greatly to the international astronomical prestige of Canada. In 1940 the Chant Medal was established in his honour by the Royal Astronomical Society of Canada as an annual award to noteworthy amateur astronomers in this country.

By 1912 Dr. Chant had become imbued with the idea that Toronto should have a large research observatory worthy of the institution. To this end, through lectures and public education, he began a one-man campaign. Several times his dream seemed about to materialize—and then faded away. But in 1927, the late Mrs. Jessie Donalda Dunlap offered to present such an observatory to the University of Toronto as a memorial to her late husband, David Alexander Dunlap. Thus was born the giant 74-inch reflecting telescope, which was the second largest in the world at the time of its dedication in 1935, and which has made a notable contribution to the strength of Canadian astronomy.

Though Professor Chant retired as director on his 70th birthday, May 31, 1935, the day on which the observatory was formally dedicated, and when he received the LL.D. degree from the University of Toronto, his interest in the institution never flagged. He maintained his office there, and until two years before his death worked in it daily. His last full measure of devotion was to leave practically his entire substantial estate as an endowment for the observatory which he founded.

His many affiliations included, besides the Royal Society of Canada, of which he was President of Section III in 1932, and the Royal Astronomical Society of Canada, of which he was editor and former president, the Royal Astronomical Society, the American Physical Society, and the American Astronomical Society, of which he was a former vice-president. He was the recipient of a medal at the Harvard Tercentenary. He was a faithful atten-



CLARENCE AUGUSTUS CHANT

dant of the Richmond Hill United Church and a member of the Harvard Club of Toronto and the Madawaska Club.

Behind all his efforts was his gracious wife, the former Jean Laidlaw, who predeceased him in 1943. Many visitors will remember their kindly hospitality over many years in Toronto, later at Observatory House, and during the summer at their cottage on Go Home Bay. The saddest aspect of his life was the death of his only son, James, at the age of sixteen. Surviving are his two well-known daughters, Etta (Mrs. Reginald Hopper) and Dr. Elizabeth Chant Robertson (Mrs. H. Grant Robertson), both of Toronto, and four granddaughters.

HELEN SAWYER HOGG

Charles Trick Currelly

1876–1957

WITH the death of Charles T. Currelly, M.A., LL.D., Order of the Medjidie, F.R.S.C., the Royal Society has lost one of its senior and most distinguished Fellows. Born in Southwestern Ontario, he gained his Bachelor's degree at the University of Toronto in 1898 and, while studying theology, took his Master's degree in 1902. Going to England to study labour conditions, he acquired an Egyptian figurine and, seeking information about it, called on Sir Flinders Petrie. The upshot was that he was taken on Petrie's staff and went to Egypt as a junior archaeologist. Currelly always claimed that this opportunity was a pure accident; perhaps it would be fairer to say that it was an early example of two of Currelly's outstanding characteristics, namely his intense curiosity about objects and their use, and his flair for acquiring information from the accepted leaders in any field.

In Egypt he laid the foundations for a career in scientific archaeology, but he abandoned this in favour of what proved to be his life-work, the establishment and building up of an archaeological museum in Toronto. As a first step, he brought back to Canada objects to illustrate the art, and particularly the life of the common people of the eastern Mediterranean at the time of Christ.

Currelly's objective gradually widened to that of a museum which should display the hand-crafts of all mankind from the Old Stone Age to the Industrial Revolution. No museum had aimed at such a goal either in time or in space, but Currelly's courage and imagination saw the possibilities and he devoted his life to their fulfilment. He believed passionately in Canada, and he believed that the display of objects was the logical way to help young Canadians understand the history of human development. Furthermore, he felt the opportunity of studying the arts of man was the best way to stimulate good Canadian craftsmanship and design. For the museum, of which Currelly dreamt, was never to be a mere collection of curios; it was to be a living series of examples of human achievement, with the past acting as a guide to the future. Inspiring others with his own enthusiasm he collected money which he used in shrewd purchases. Few men have been as successful in raising money; still fewer have made it go so far.

Plans had been made for a geological museum at the University of Toronto, but it was Currelly's extensive collections which led the University, with support from the province, to include a large archaeological section in the five-part Royal Ontario Museum which was opened in 1914, and enlarged in 1932. He became the first Director of the Museum of Archaeology, and, at the same time, Professor of the History of Industrial Art, a title later changed to Archaeology.

From 1914 until his retirement in 1946, Currelly held these two positions. He valued his university connections, particularly with Victoria, where he

served on the Board of Regents for many years. As a lecturer he was stimulating and inspiring, but he was not interested in the details of curriculum, or in the administrative responsibilities of heading a department. Teaching, writing, and research were subordinated to the needs of the museum. A skilled draftsman with a fine sense of form, he planned cases and built up a tradition of cabinet making in the museum. But his mind was constantly on the acquisition of specimens and he became an almost legendary figure in the museum world for his ability to find choice pieces, and to buy when pieces were low. His unique contribution was the building up of a truly great series of collections which has made the archaeological section of the Royal Ontario Museum famous.

The aims of museum work have changed, but it must never be forgotten that it was due to Charles T. Currelly that the archaeological collections of the Royal Ontario Museum came to Canada. *Si monumentum requiris circumspice*, might well be said of him as one passes through gallery after gallery.

T. F. McIlwraith

CHARLES TRICK CURRELLY

John Dearness[1]

1852–1954

DR. JOHN DEARNESS died at his home in London, Ontario, on December 6, 1954, at the ripe age of 102. His death brought to a close a long career as educationist, botanist, and mycologist.

He was born in Hamilton, Ontario, May 13, 1852, but at the age of four was taken by his parents to live on a farm about twenty miles northeast of London. He has said that from his sixth year he kept a wild-flower garden of his own. He attended a rural school from six to sixteen years of age, off and on, doing a man's work on the farm at fourteen or fifteen years. Then having secured some text-books, he prepared himself for teachers' examinations at London. Later, in 1871, he passed first in a three months' course at Toronto Normal School, winning also a "Special Certificate," rare at that time, "in Natural History, Botany, and Agricultural Chemistry." An instructor, Dr. Kirkland, said some years after, he was "the best student I ever had anywhere."

At the age of nineteen John Dearness became principal of Lucan village school, north of London. At twenty-one he was appointed principal of Strathroy public school which, in 1874, was raised in status to a high school and Dearness was also promoted. In December, 1874, he left Strathroy to become Public School Inspector of East Middlesex, a position he occupied for the next twenty-five years. During this period, in 1893, he was placed in charge of the Ontario educational exhibit at the Chicago World's Fair. From 1888 to 1914 he was also Professor of Biology in the Medical School of the Western University of London, now the University of Western Ontario.

In the 1880's he engaged himself more and more in botanical studies, exploring the countryside and making collections. He developed an intense interest in mycology, microbiology, entomology and phytopathology. He began publishing, along with J. B. Ellis, on Canadian fungi, in the 1890's. He also did occasional articles on educational subjects. His activity in the field of entomology led to his appointment by the Ontario Government in 1899 to the San José Scale Commission.

At the end of 1899 Inspector Dearness was appointed vice-principal of the London Normal School. Here he was an immensely popular teacher. At this time he secured by extramural study the degrees of B.A. (1902) and M.A. (1903) from Western University; and also his writings on both education and mycology increased in number. He was an associate editor of the *Nature Study Reviews* (Ithaca) and of *Mycologia* (1909–1930). Among his numerous books and articles on nature study the most generally known is *How to Teach the Nature Study Course* (Toronto: Copp Clark, 1905). His contribution to the government report (1923) on the Canadian Arctic Expedition of 1913–18 is important.

[1]The writer is deeply indebted to the late Dr. W. F. Tamblyn, a long-time professor of English at the University of Western Ontario, for much of the information given here.

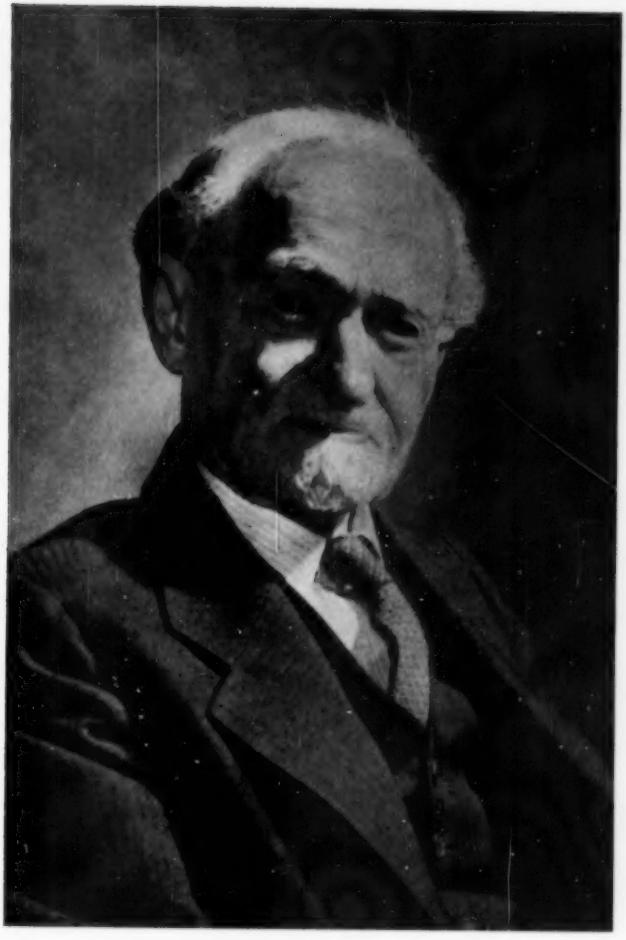
He found time to edit a posthumous volume of poems by Robert Elliott, his friend and naturalist-disciple (1905). At the Normal School he made good use of the X-ray machine and the telescope both for his own intellectual curiosity and for the doctors and general public. The University of Toronto had him as examiner in biology at the Ontario Agricultural College. He was in constant demand as a lecturer, and conducted summer schools all the way from Brandon, Manitoba, to Truro, N.S. One summer he botanized on the Magnetawan River with Dr. H. A. Kelly of Baltimore. He devoted long hours with his microscope to bushels of specimens sent to him for identification or consultation by mycologists everywhere. From 1917 to 1943 the British *Who's Who* had a lengthy article on him, and he was listed also in the German *Jahrbuch der Gelehrten der Welt*.

From 1902 to 1939 he was auditor of the Ontario Educational Association. He was a member of the University of Western Ontario Senate and of the Ontario Advisory Council of Education from 1909. In 1918 he was advanced to the Principalship of the Normal School and in 1922 was superannuated. Shortly after, the University of Western Ontario added to his B.A. and M.A. degrees that of LL.D. Superannuation did not end his work and many writings on fungi followed 1922. Among them most noteworthy, perhaps, were articles in *Mycologia* (1911–46); contributions to the volumes on fungi of Manitoba and Saskatchewan by himself, Bisby, Buller and others (1929 and 1938); "Summary of the Prevalence of Plant Diseases in Canada," *Canadian Department of Agriculture Bulletin* 71: 62–76, 1926.

During his last years he was given many honours. In 1935 he received the King's Medal, and in the following year was elected a Fellow of the Royal Society of Canada. In 1941 the Dearness Research Laboratory in the Montreal Botanical Garden was formally opened and his speech on the occasion was fully reported and praised in the Montreal press.

On his 90th birthday (1942) a reception was tendered him in London, attended by representatives of some dozen institutions and organizations, the City, the University of Western Ontario, the London Normal School, the Public Library, the Ontario Education Department, the Ontario Educational Association, &c., &c. His 100th birthday brought him presents, telegrams, cards and letters from over 500 admirers all over America and beyond. A final demonstration of esteem from his home city was the City Council's naming of "The John Dearness Home for Elder Citizens," a very handsome structure which was dedicated in his honour in June 1953. He himself was present on the platform.

Dearness was a friendly man and cooperative. He was active in many societies, in a variety of fields, local, national, and international: Baconian Club, London (charter member and honorary president); London Canadian Club; London and Middlesex Historical Society; London Current Topic Club (member and honorary president); McIlwraith Ornithological Society; Ontario Educational Association (president, 1896–7); Ontario



JOHN DEARNESS

Branch of the British Simplified Spelling Society (secretary); Entomological Society of Ontario (president, 1897–8); Ontario Historical Society (president, 1912–14); Nature Study Association of America (vice-president); Canadian Division of the American Phytopathological Society (president, 1912–14, 1927); Mycological Society of America (president, 1937); Canadian Microbiological Society (honorary member, 1953).

In 1881 he married Harriet Emma Wilkinson, a woman of notable graciousness and charm, who was a great help to him in his botanical work. Of this marriage there are three children, two daughters and a son.

J. J. TALMAN

Ralph Emerson DeLury

1881–1956

A LIFE devoted to science, more particularly to solar research, ended on September 20, 1956, with the death of Ralph Emerson DeLury in Manilla, Ont., the town of his birth. Born on November 23, 1881 of Irish parents—his father from Southern Ireland and his mother from the North—Ralph was the eighth child of Daniel DeLury and his wife Catherine Weir.

Ralph DeLury was one of a family of scholars including Prof. A. T. DeLury of the University of Toronto who predeceased him. He received his early education at the Public School in Manilla and at the Port Perry High School. He later attended the University of Toronto and received in turn a Bachelor's, Master's and Doctor's degree in 1903, '04 and '07 respectively. Mathematics, physics and chemistry were his special subjects. From 1903 until 1906 Dr. DeLury held a Fellowship at his Alma Mater and the following year he was an assistant in the Department of Physical Chemistry at Princeton University.

In 1907, when he severed his formal connection with university life to join the staff of the Dominion Observatory in Ottawa, astrophysical research was in its infancy in Canada. A horizontal solar telescope was installed at the Observatory and Dr. DeLury's first task was in setting up, adjusting and testing the 23-foot solar spectrograph to be used in conjunction with this telescope. He was also instrumental in establishing a small chemical laboratory to assist in problems arising from astrophysical investigations.

This early association with solar research paved the way for a life work in this particular field. Dr. DeLury was appointed chief of the Solar Physics Division in 1913 and retained that post throughout his 39 years with the Observatory. In 1929 he was made Assistant Director, and for a short time prior to his retirement in 1946, he was acting Dominion Astronomer.

While his scientific interests were varied, the problems dealing with solar rotation and the correlations between sunspots and various terrestrial phenomena constituted his special investigations and he published many papers concerning these research problems. Combined with his scientific career was an active participation in the study of ornithology, a study which he maintained throughout his life.

Ralph DeLury was a very modest man and shunned any pomp or affectation. Although well-known in scientific organizations, he also made many friends through his active interest in things pertaining to nature and wildlife. To those who knew him even slightly it was evident that he was a true lover of nature. His gentle and patient care of the birds and little animals which frequented his home, was an outstanding and lovable characteristic. Children in his neighbourhood soon recognized him as their friend and to many he

taught that the rewards were far greater if a camera, not a rifle, were used in "shooting" birds.

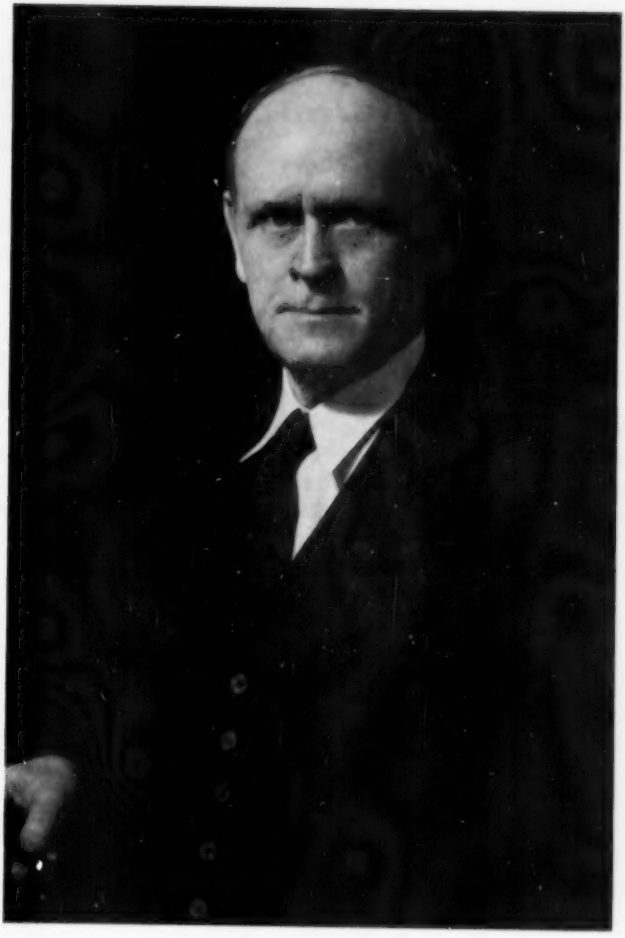
As evidence of this great interest, his Ottawa home became a veritable bird sanctuary and many injured birds received care, food and shelter until again able to face the world on their own. They too became his intimate friends. Following retirement, Dr. DeLury returned to the home of his birth to enjoy his hobby at leisure. His Manilla estate in turn became a sanctuary for birds and waterfowl, and it was in such surroundings that he enjoyed his years of retirement.

As a younger man Ralph DeLury was a keen sportsman, with baseball and tennis his main activities in this field. His interest in baseball never lessened with advancing years, and radio and TV added much to his enjoyment in following this sport.

The list of organizations of which Dr. DeLury was a Fellow or a member includes the following: Fellow of the Royal Astronomical Society of Canada; Fellow of the Royal Society of Canada; Fellow of the Royal Astronomical Society; Fellow of the London Chemical Society; American Association for the Advancement of Science; Optical Society of America; Deutsche Astronomische Gesellschaft; American Astronomical Society; American Statistical Society; Société Astronomique de France; American Society of Mammalogists; Ornithological Union; Cooper Ornithological Club; Wilson Ornithological Club.

Dr. DeLury was married in Ottawa to the former Isobel MacBrien, who predeceased him in 1913; there were no children. The surviving members of his family are a sister Abigail of Manilla and two brothers, Daniel B. of Walker, Minn., and Justin S. of Uxbridge, Ont. To them deepest sympathy is extended.

C. S. Beals



Ralph Emerson DeLury

George Lyman Duff

1904–1956

GEORGE LYMAN DUFF was born in Hamilton, Ontario on January 26th, 1904, the youngest son of the late Charles and Elizabeth Duff. He attended the public and high schools in Hamilton, Ontario, and entered Victoria College, in the University of Toronto, in 1922, registering in a biological and medical sciences course that would give him a B.A. at the end of four years, and an M.D. at the end of an additional three. This period is of special interest because of two influences that had much to do with his subsequent career.

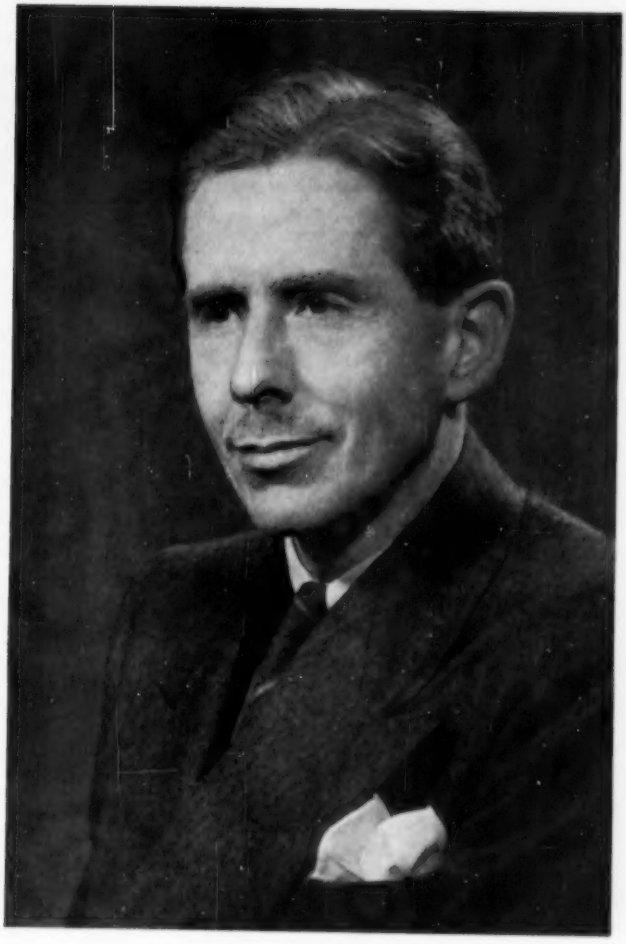
It is probably true to say that one of the principal motivating forces in Lyman Duff's life was a desire to be successful in experimental research. The background of such an interest is not too difficult to trace, the first indication becoming evident while he was an undergraduate in the biology and medicine course. During the summer vacations of 1924 and '25, he worked at the marine biology laboratories in St. Andrews' and Halifax. He was sufficiently stimulated by this experience to write a thesis for the Master of Arts degree on "Factors involved in the production of annual zones in the scales of the cod." This was an achievement indicative of considerable singleness of purpose, as Duff was still an undergraduate in the medical course with a very full curriculum when he wrote this. At the same time he was obtaining honour standing in his class and was elected to Alpha Omega Alpha Honour Medical Fraternity. A major influence in determining the direction of Duff's future interest in research, while he was still a medical undergraduate was his teacher in pathology, the late Professor Oskar Klotz, who was also a man of purpose and remarkable background. As resident in pathology at McGill University under Adami, Klotz wrote his first paper on arteriosclerosis in 1906. During the next 25 years he published many more, and came to be recognized as a world authority on this subject. He had pursued his studies in Germany, and later in Pittsburgh as Professor and Head of the Department of Pathology, then in a similar capacity at the University of São Paulo, Brazil, and finally after coming to Toronto in 1923 as Head of the Department, he was appointed a member of the Yellow Fever Commission of the Rockefeller Foundation and worked in West Africa on two occasions for a total of twelve months. A dynamic teacher and a romantic figure because of his travels and associates, but with an unromantic approach to pathology and research, Klotz had a greater effect on Duff than anyone else. On graduation he entered the Department of Pathology and began to work towards a Ph.D. degree with arteriosclerosis as his subject. After two years with Klotz, Duff obtained an appointment at Johns Hopkins with the late W. G. MacCallum. There he completed his Ph.D. thesis, and during the next three years worked with A. R. Rich on several different projects. Duff, however, remained true to his first interest, arteriosclerosis,

and resumed work in this field on his return to Toronto in 1935, where he was again associated with Klotz, and after his death with William Boyd. In 1939 he was appointed Strathcona Professor of Pathology at McGill University, but his plans for the development of experimental pathology there were held in abeyance until the end of the war. Within the short space of ten years, though, Duff created a centre of experimental research that is unequalled in any other Department of Pathology in Canada today, and is highly regarded throughout North America. Young men and women from all over Canada, the United States, and Great Britain came to him for training, and today four of his former students and associates occupy chairs of pathology. It is too soon to assess the ultimate importance of his researches in the field of atherosclerosis, but in 1956 he was awarded the Flavelle Medal by the Royal Society, and had taken part as a recognized authority, in all the major conferences and symposia on arteriosclerosis during the preceding ten years. He was one of the founding members of the American Society for the Study of Arteriosclerosis. His Ph.D. thesis on "Experimental Atherosclerosis induced by Cholesterol Feeding," published 22 years ago, remains an outstanding and authoritative work. Lyman Duff did attain the success he sought in experimental pathology, but there were other sides to his character that were just as important to the development of medical science and education in Canada. As a teacher he was pedantic and somewhat pedestrian, without artifice or histrionics at all, but his lectures had a lucidity that every student appreciated and esteemed. This clarity of presentation derived from his keenly analytical mind. He was a master of logic, and every step forward in his unravelling of the mysteries of inflammation, for example, was a logical sequence of the preceding event, and nothing was left to the imagination. He was an outstanding teacher.

It was undoubtedly this same quality of mind, a delight in a meticulous analysis of a subject, and a logical step by step development of an idea, that made Duff an able Dean. He had accepted this appointment in 1949, and retained the post until his death in 1956. He enjoyed the intricacies of administration but was especially stimulated by the opportunities he had to improve medical education.

One cannot discuss the scientific achievements of Lyman Duff without reference to the more personal side of his life. As an undergraduate he was active in the rowing club, and played the violin for his own amusement. Although one could not describe him as gregarious, he made friends easily, and kept them. His sense of humour was spontaneous and even at times ribald, but he had nonetheless a well developed respect for authority. As a Department Head his staff respected and liked him.

Lyman Duff's hobby was his family. He had married Isobel Griffiths of Niagara Falls, in 1935, and they had two sons and two daughters. A family deeply interested in one another and in doing things together, Lyman Duff's success in medical education and research owed much to the happy and secure family life he enjoyed.



George Lyman Duff

The respect in which Duff was widely held is well shown by the posts he was given in many scientific organizations in the United States and Canada. Shortly before his death he had been President of the National Cancer Institute, and had served on the Medical Advisory Committee of the National Research Council. He had been President of the American Association of Pathologists and Bacteriologists, the American Society for the Study of Arteriosclerosis, the Quebec Association of Pathologists, and served on the editorial staffs of several scientific journals.

The death of Lyman Duff on November 1st, 1956, at the age of 52 years, has deprived academic medicine in Canada of a major figure, at the height of his career.

JOHN HAMILTON

Louis Vessot King

1886–1956

LOUIS VESSOT KING, M.A., D.Sc., F.R.S.C., F.R.S., distinguished professor and physicist, fellow of our Royal Society of Canada for over forty-one years and president of Section III in 1918–19, died on June 5, 1956, at the age of seventy years. He had suffered from a tragic illness continuously for the last fifteen years of his life, and intermittently for short periods during earlier years.

In spite of this devastating interference, his brilliant career in theoretical, experimental and applied physics revealed a record of combined achievement, general scholarship and versatility, unequalled by any Canadian physicist. Evidence that he had already been given this unique rating as early as 1934, is apparent in the citation accompanying the presentation to him of the Flavelle Medal. In it, he is described as "the most brilliant mathematical physicist that Canada has produced," and also the further statement is made that "No Canadian has displayed greater originality or versatility in his scientific work than Dr. King who has won international fame as a mathematical physicist and engineer." This opinion is still confirmed by those who have studied or used his contributions.

Even in 1920, when King was promoted to the research chair, previously held by H. L. Callendar, Ernest Rutherford, H. T. Barnes and H. A. Wilson at McGill University, and again in 1924 when he was elected from afar to the Royal Society of London, both Sir J. J. Thomson and Lord Rutherford had independently described King as the outstanding theoretical physicist in Canada, and commented on his additional talents as an experimenter and as an inventor. Although King had been in two undergraduate lecture courses given by Rutherford at McGill, and in two or three by Thomson at Cambridge, he neither received graduate training nor performed research under the guidance of either of these famous men; in fact, King's chief contributions were in nearly all fields of physics other than radioactivity and atomic physics. Their exceptional praise of his work thus became all the more impartially judicious. Rutherford, not long before he died, said to the writer, as nearly as can be remembered: "How is King? . . . You must look after him, preserve him, relieve him as much as possible from routine and regular teaching, for he is still the best asset of physics in Canada, and among the best anywhere."

Since 1940 expressions of friendly concern about his health were received with impressive frequency from prominent confrères in many laboratories in distant places, and, latterly, these inquiries were usually coupled with comments on the great misfortune to science resulting from his premature incapacity. Particular reference was often made to the value of his work and to his last views on the means of improvement of the techniques for selective emission and reception of short waves for purposes of signalling and detection.

The chronology of King's education, appointments, and the locations of his activities may be summarized briefly. Born in Toronto on April 18, 1886, he was brought to Montreal as an infant, where he spent the balance of his life—apart from a short period of his childhood at Stanstead, Que., three or four years of phenomenal student accomplishments at Cambridge University, from 1905 to 1909, and the considerable travelling in later years required for numerous scientific collaborations and gatherings. In Montreal, he attended the old Montreal High School till 1901, in each year the youngest in the class, regarded as a prodigy, well liked, and capturing a record quantity of honours and first places. Then at McGill University from 1901 to 1905, he continued to be easily first in the majority of his examinations, always interested in the whole field of a subject far ahead of his years, often reading more extensively outside his prescribed studies than in them, and capturing such scholarships, prizes and medals as were available.

McGill University was his academic home, and the centre of his scientific work for the whole of his active life. After his Cambridge period he returned to the physics department at McGill as a demonstrator in 1909. In rapid sequence he became lecturer in 1910, assistant professor, 1913, associate professor, 1915, and finally research professor from 1920 until his permanent incapacity commenced in 1941.

Heredity and early environment, from childhood to maturity, had unusually potent influences on the career of this exceptionally promising young man. In addition to his mother, father and colourful French grandfather, there were among his forbears and relatives many striking examples of ability, scholarship and tenacity of purpose. His father, Alonzo King, a scholarly man of high spirits and ideals, was a relatively young schoolmaster when he died, leaving his widow, née Louisa Vessot and their two brilliant children, Louis and Mabel. Mrs. Alonzo King was an exemplary mother possessing vision, capability and almost unbounded energy; with the aid of a small inheritance, some teaching and a part time post as a government inspector of working conditions for women in factories, she managed to maintain a pleasant, hospitable, bilingual home, where many interesting, stimulating and often distinguished friends, English and French, young and old, often gathered. With the additional aid of the scholarships won by her son and daughter, she saw them through school, university and graduate education with unremitting devotion and wise advice.

Louis King often expressed indebtedness to his grandfather, the Reverend Joseph Vessot, both for inherited characteristics and for environmental influences stemming from this remarkable man. Characterized by lofty ideals, a philosophical mind, exceptional "drive," good deeds and the capacity to hold his flock together under considerable difficulties, the life of Joseph Vessot had been full of unusual variety. Born in France, a soldier there for some years, a pillar of Protestantism in Paris, an active distributor of French Bibles with many experiences akin to those described by George Borrow in the unexpectedly lively book, *The Bible in Spain*, and coming finally to

Canada on the same mission, he ultimately married and settled down in Joliette, Que., where he became a French Protestant clergyman in a Roman Catholic community, achieving respect on all sides.

King, in later years, thought himself singularly fortunate in the fact that at no time had either McGill or Cambridge provided their undergraduates honouring in mathematics and physics with a more stimulating environment than existed in his student days at each university. He said that his choice of a career in natural philosophy was primarily due to the director of the McGill physics department, John Cox, a former student of Clerk Maxwell, and to James Harkness, head of the McGill mathematics department, who with Cox persuaded him to go to Cambridge for tripos training before proceeding with some original work he already had in mind. In addition, King gave credit to Rutherford, Cox's colleague at that time, for the influence of the exciting colloquia, where Rutherford, fortnightly, "scintillated with discovery."

The majority of King's best papers and memoirs appeared in the *Philosophical Transactions* of the Royal Society of London, and the *Philosophical Magazine* of London, and he made excellent short contributions to a large number of physical, mathematical, engineering, and general review journals. However, he set a good example, by giving the first announcements of his more important contributions, at the annual May meetings of the Royal Society of Canada, and providing brief outlines or summaries for its *Transactions*. His attitude was to support our own journals first, but until the publishers could provide appropriate space, speed of printing, and certainty of circulation to those readers most interested, he felt that any author should be able to publish where he chose without reproach.

King always insisted there was too much repetitious publication in our time, and he particularly condemned what he called "resurrection pies of plagiarisms garnished with a few new tidbits." For honours and graduate guidance he preferred scholarly texts of proven value supplemented by authoritative lectures and reprints dealing with recent advances. It was characteristic of him, therefore, that he rejected numerous requests to publish his major contributions and surveys in expanded treatises of more comprehensive range, and only wrote one treatise in book form. It was written, in the mornings during a short holiday, to meet an urgent need in the use of elliptic integrals and also to remind mathematicians of the importance of assisting their readers how to reach numerical results whenever required. The book, entitled *On the Numerical Evaluation of Elliptic Integrals*, was published by the Cambridge University Press in 1926. It was well received by both mathematicians and physicists, and described as one of the best books of its kind.

Like Kelvin whom he resembled in his scientific abilities and favourite interests, King added to his combination of both theoretical and experimental brilliance the imaginative genius of the inventor, and a mechanical skill akin to that of a professional instrument maker. Perhaps his best in-

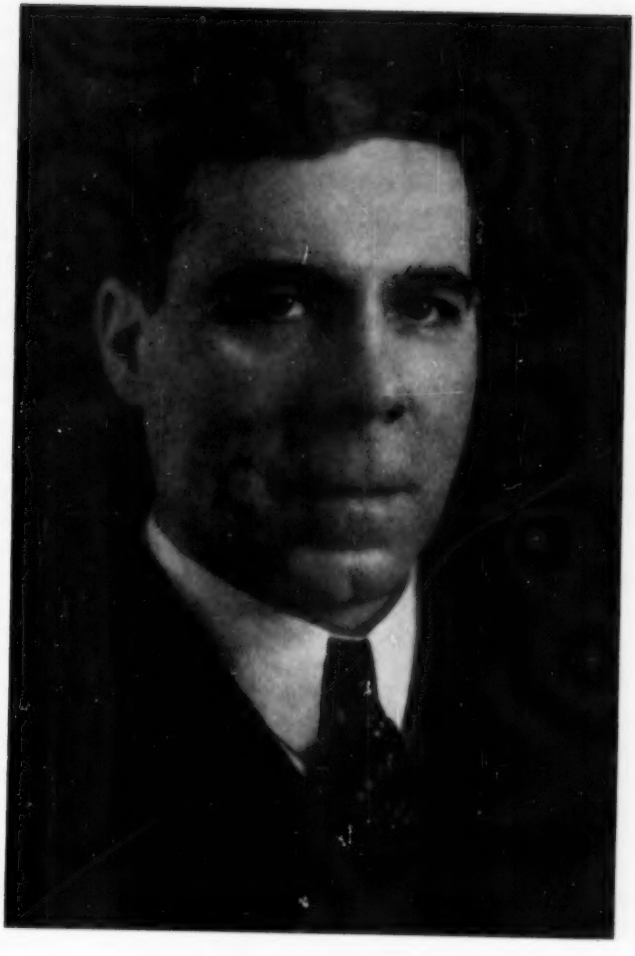
vention, and certainly the one most dependent on the combination of his experimental and mathematical abilities, was the Hot-Wire Anemometer, for which he received the unexpected award of the Howard Potts Gold Medal of the Franklin Institute of Philadelphia. The auxiliary work led to a number of papers on the theory of natural and forced convection, and possible applications of his instrument in meteorology, gas analysis, gas flow measurements, and the determination of the average cooling power of turbulent and variable currents of air, water or other fluids, on various hot bodies. He regarded as his most enjoyable project, his fruitful work on Fog Horns and other navigational aids, particularly linked radio and acoustical signalling. This group of researches was carried out intermittently between 1913 and 1923, chiefly in the summer months with the aid of six or seven collaborators and assistants, and at various places including, chiefly, Father Point both ashore and at sea, Prescott at the Navigation Supply Depot, and the Physics Laboratories of McGill University and Macdonald Agricultural College.

The following were some of the scientific items in this comprehensive group of investigations: the perfecting of King's thermal method for the determination of acoustical efficiency of Fog Alarm Apparatus; the development and testing of a modification in the design of part of the fog alarm system; the development of techniques for acoustical surveys off shore; the correlation of dead-spots, fadings and enhancements of the sound blasts with the prevailing atmospheric conditions and also with the shore contours; the testing of an application of G. I. Taylor's work on eddy-structure and the testing of King's highly successful modification of the Webster Phonometer to make possible both absolute and relative measurements of sound intensity.

On several occasions between 1910 and 1916 he assisted H. T. Barnes on ice studies both in the laboratory and on one voyage in the North. Studies of the influence of atmospheric conditions on the growth of ice, the physical constants of the ice found in icebergs and glaciers which had remained unmelted through thousands of years, the X-ray analysis of the molecular structure of ice, the improvement of the recording apparatus for Barnes' microthermometer, and many others, led to at least five papers of his own, in addition to his contributions in assistance to Barnes.

Similarly, at a later date in the twenties, he collaborated helpfully on several occasions in regard to the theory of geophysical problems, which required consideration for the field work, and in the well known text-book of Eve and Keys on the methods of geophysical prospecting.

His lengthy memoir in the *Philosophical Transactions* of the Royal Society of London on the scattering and attenuation of electromagnetic radiation by the atmosphere, over a large range of wavelengths and densities, was one of the first of his contributions to attract general attention to his command of analysis for obtaining new results even in a much investigated subject. In this paper he modified a long-standing equation developed by Lord Ray-



Louis Vessot King

leigh, and obtained interesting checks for his own theory, and new results from it. One can observe in this paper the similarity in methods of analysis and in style of presentation between King and Rayleigh, which is still more noticeable in their respective short notes and papers of a mainly mathematical character.

The last paper he wrote before the onslaught of his final illness, dealt with important problems concerning the designs and theory of antennae. Highly prophetic were many of his comments made about that time concerning desirable developments in both war and peace. The demand for reprints of his work in this field were of record proportions, and lasted for several years after his retirement from active work.

Special mention must be made of his gyromagnetic electron, and its role in his favourite investigation which was never brought to a final conclusion, but always considered by him as someday to be his magnum opus. In 1926 he published what he intended to be an introductory preview of how the "classical electrical theory would soon return like a prodigal to the fold" with the help of his gyromagnetic electron.

His booklet published by the Mercury Press in Montreal and entitled *Gyromagnetic Electrons and a Classical Theory of Atomic Structure and Radiation* attracted favourable comments in both British and American scientific circles, but he finally accepted the criticism that certain difficulties must be clearly resolved before his methods of approach would be likely to displace the well entrenched quantum analysis, on which the rising generation had been brought up. A study of his booklet will immediately silence anyone inclined to jump to the conclusion that his attempts were necessarily doomed to failure. He makes a reasonable case for the prospects of deriving the colossal results of quantum and wave mechanics from classical dynamical and electrical theory.

Like Sir J. J. Thomson, he considered that "tinkering" with a working model to make it correspond more closely to actuality, is ultimately likely to be more fruitful than tinkering with principles to make them consistent with some apparently anomalous actuality. The gyromagnetic electron unfortunately now almost forgotten, deserves further tinkering, as its successes so far are still suggestive.

In religion, Louis King was a Protestant, and he not only accepted the precepts of the Christian way of life, but applied them both consciously and conscientiously, in his own daily activities and ideas. Nevertheless, he believed, as do many men of science, that the whole universe of what men call matter, radiation, mind, and spirit, is probably a consistent entity, and that one of the supreme aims of man as an inquiring component of the universe, should be to keep, forever, an open mind in all things, so that the pursuit of truth may be totally unprejudiced and always dynamic.

It is remembered by many that King almost invariably illuminated both the topic and the reader or listener, not only in his scientific writings and lectures, but also in his extempore discussions and casual conversations. He

had a readier wit, and was in his turn a better listener than is common among remarkably versatile conversationalists such as he undoubtedly was. Conversation, music and games seemed to be his favourite relaxations. He always maintained that a lack of them tended to make people both misunderstanding and misunderstood. In his day he was a good rower, a fair rider, and tennis player, a passable golfer, and able to hold his own acceptably in billiards, chess, bridge and other games.

It was a treat to see him on several occasions the centre of attraction and fun, playing quoits, with the men of the sea at the pilot's hotel in Father Point, then up in the north country among "les habitants," or at luncheon with business men in downtown Montreal. He could be a good companion with sterling folk of any kind, for the fascination of his personality was by no means confined to the ivory towers of distinguished specialists, nor was the essence of greatness in him limited to the domain of mathematics and physics.

When the death of Louis Vessot King came finally as a restful release from his many years of ill health and restraint, there was a most profound sorrow in the hearts of those friends who added warm personal affection to their high respect for his great talents and achievements. His chief mourners are his wife, Mrs. L. Dorothea King, née Neville, and his sister Miss L. Mabel King. He was exceptionally indebted to these ladies for their unceasing devotion and affection.

A. Norman Shaw

Ernest William MacBride

1866–1940

PROFESSOR E. W. MACBRIDE, first Strathcona Professor of Zoology at McGill University, was born on December 12, 1866, in Belfast, Ireland. As a boy he attended the Academical Institute at Belfast, subsequently spending a year in Germany where he became proficient in the language. His later education was at Queen's College, Belfast, graduating B.Sc. (London) in 1889. In 1888, however, he became an Exhibitioner and later a Fellow of St. John's College, Cambridge, graduating B.A. from Cambridge in 1891 with first-class honours in Zoology and Botany in the Natural Sciences Tripos. In 1891 he spent a year at the Marine Station at Naples, returning to Cambridge at the end of his stay to become University Demonstrator in Animal Morphology. The Cambridge School at this time was under the leadership of Adam Sedgwick and interested mainly in Embryology and young MacBride took up enthusiastically the study of the embryology of the echinoderms, a subject which remained one of his main interests throughout his life. In 1897 he came to Canada to be the first occupant of the Chair founded at McGill University by Lord Strathcona. MacBride found there that the instruction in Zoology was confined to a single lecture course, with no laboratory and no library. In 1898 he had reorganized the teaching. Biology was made obligatory on all first-year medical students. Laboratory space for one hundred students was obtained and a zoological library was started, a library which later, as the Blacker division of the University Library, became one of the outstanding collections in North America.

During this time he became a Fellow of the Royal Society of Canada and in 1902, he married Constance Harvey Chrysler of Ottawa, by whom he had two sons.

MacBride spent twelve years at McGill, teaching in the winter and carrying on his research at marine laboratories in the summer. During this period, in 1901, in collaboration with Sir Arthur Shipley, he wrote the then well-known text-book on Zoology of which both British and American editions were produced. A second edition was printed three years later but for some reason it was not subsequently reprinted, although in lucidity of style, progressive approach, and general readability, it was an outstanding contribution to Zoology. Although long out of print, it can still be read with both profit and enjoyment.

In 1909, MacBride returned permanently to England, in 1914 becoming Professor of Zoology at the Imperial College of Science in South Kensington. His extramural interests were considerable. He was a vice-president of the Linnean Society and of the Zoological Society, Chairman of the Marine Biological Association and of the Advisory Committee on Fisheries Research as well as of the Royal Society's Bermuda Oceanographical scheme.

Throughout this period, his interests in embryology remained strong, culminating in his well-known text on the Embryology of the Invertebrates.

MacBride, in addition to being an enthusiastic embryologist, was also a strong adherent of Lamarckianism and in later years was quite definitely its leading defender. His vigour in championing this doctrine sometimes outran his discretion, as for example, in his sponsorship of the unfortunate Kammerer's experiments on acquired characters in frogs.

His later life, spent away from Canada, and with different interests, has tended to obscure the important parts he played in this country. The most important part has gone almost unnoticed.

From 1875 to 1884, Sir William Osler (one of the original Fellows of the Royal Society of Canada) was Professor of the Institutes of Medicine at McGill and played a fundamental part in introducing preclinical sciences and the microscope into the curriculum. About fourteen years later, MacBride introduced Biology into what we now call the pre-medical subjects. These are perhaps the two most important and fundamental introductions into our modern system of medical education. It was natural that Physiology and Pathology should be the first of the laboratory subjects to supplement Anatomy and that the microscope should become the medical scientist's most important tool, even more important than his scalpel. But it must have taken a great deal of effort and of persuasion to add Biology to the subjects studied by the medical student. As Patrick Manson later pointed out, an epidemiologist, a pathologist or a capable practitioner must first of all be a naturalist and while this is generally recognized today, some sixty years ago the position was entirely different. Scientists then had not completely accepted the modern doctrine of evolution with its essential corollary that all life is related and, in 1898, the young Professor of Zoology must have required all his enthusiasm and vigour in championing the cause of compulsory Biology for medical students and helping to set in motion the forces responsible for so many important advances in modern medical science.

THOMAS W. M. CAMERON

ERNEST WILLIAM MACBRIDE

Arthur Leonard Parsons

1873–1957

PROFESSOR PARSONS was, throughout his long life, a devoted student of mineralogy. He found much interest and pleasure in collecting, identifying and classifying minerals and the results of his studies are recorded in around ninety published papers. He was born at Mt. Morris, New York, on September 16, 1873 and he died on January 6, 1957 at his home in Toronto after a brief illness. He graduated from New York University, in 1896, with the A.B. degree and later served for one season on the United States Geological Survey as an assistant and two years as Assistant Mineralogist in the New York State Museum. From 1902 to 1907 he was an Instructor in Mineralogy at the University of Minnesota which he left to accept the position of Lecturer in Mineralogy at the University of Toronto. He rose through the ranks of Assistant and Associate Professor to Professor of Mineralogy by 1929, a position he held until his retirement in 1943 when he was made Professor Emeritus. He succeeded Professor T. L. Walker as head of the Department of Mineralogy and Petrography in 1936.

Walker and Parsons were very close friends and it was a matter of comment that they were always found together around the University and Museum. Their main diversion seemed to be playing the game of scat, a little-known card game, about once a week with a few colleagues. When the Royal Ontario Museum was opened Parsons was Walker's right-hand man in building up one of the finest collections of minerals on this continent. Parsons succeeded Walker as Director of the Museum of Mineralogy and Petrography, in 1939, after nineteen years as Assistant Director and on retirement, in 1943, was named Director Emeritus of Mineralogy in recognition of his long service to the museum.

Although primarily concerned with minerals, Parsons showed considerable interest in the broader field of the geological sciences. He spent nine or ten summers with the Ontario Bureau, later Department, of Mines. He was a member of the Canadian Institute of Mining and Metallurgy and a frequent attendant of its meetings. He was a Fellow of the Geological Society of America, a member of the Mineralogical Society of London and Fellow of the Mineralogical Society of America and its president in 1929. He was elected to the Royal Society of Canada in 1941.

It is a remarkable fact that Parsons suffered from a heart condition for somewhere around forty years or more. At times the attacks would be so severe that he would have to leave a lecture or other activity and sit or lie down until the spell had passed. Several doctors, who passed away many years ago, predicted a short life expectancy for him, but it is probable that a kindly, humorous and sociable disposition coupled with living a quiet life enabled Parsons to counter this affliction for so long a time. His wife predeceased him by about five years. He leaves one daughter, Harriet, who is well known for her writings for journals and service in public organizations.

E. S. MOORE

ARTHUR LEONARD PARSONS

Guilford Bevil Reed

1887–1955

GUILFORD BEVIL REED died on February 21st, 1955 after a very brief illness. He was returning home from a scientific meeting when he suffered a stroke and died a few days later in a Montreal hospital. It had been obvious to his friends for some time that his health was failing, but he could not be persuaded to lighten appreciably the heavy burden which he had carried for so many years. He died, as he had several times expressed the hope that he would, while still actively engaged in the work to which he had devoted his life. He is survived by his widow Elsie Porter Reed whom he married in 1915.

Dr. Reed was a Nova Scotian born at Port George in 1887. A few years later his family moved to Berwick where he received his primary and secondary education. He attended the Nova Scotia Agricultural College and Acadia University. He completed his undergraduate work at Harvard, receiving his S.B. (Magna cum laude) in 1912. The award of his Master's degree in biology followed in 1913 and his Ph.D. with the Bowdoin prize in 1915.

Following graduation Dr. Reed joined the staff of Queen's University as Assistant Professor of Botany, a post which he held for five years combining with his University post that of bacteriologist at the Queen's University Military hospital which was located on the campus. This experience undoubtedly had a marked influence on his subsequent career as in 1920, when the University department of Pathology and Bacteriology was divided, he accepted the professorship of Bacteriology, a post which he retained with distinction until his death, combining an extensive research programme with his teaching which inspired a large number of students, over the years, to undertake graduate training under his direction.

His researches ranged extensively over the field of microbiology from the fundamental to the applied, and while chiefly interested in medical bacteriology he was always ready to assist his colleagues in other fields contributing his wide knowledge to the successful carrying out of their researches.

His interests were wide. In 1921 he carried out certain investigations on behalf of the Fisheries Research Board of which he became a member in 1930 and Chairman in 1947. He held this position until shortly before his death. Through his association with the Board he made invaluable contributions to the fishing industry of Canada.

During the Second World War, Dr. Reed served as a scientific consultant to the Canadian Army. He was also associated with the Army directorate for Chemical Warfare. His reputation was international and his advice was widely sought. During the war years he travelled extensively in his capacity as a member of several inter-allied scientific committees. His outstanding

contributions to the war effort were recognized by the award of the O.B.E. in 1943 and the U.S. Medal of Freedom with Palms in 1946.

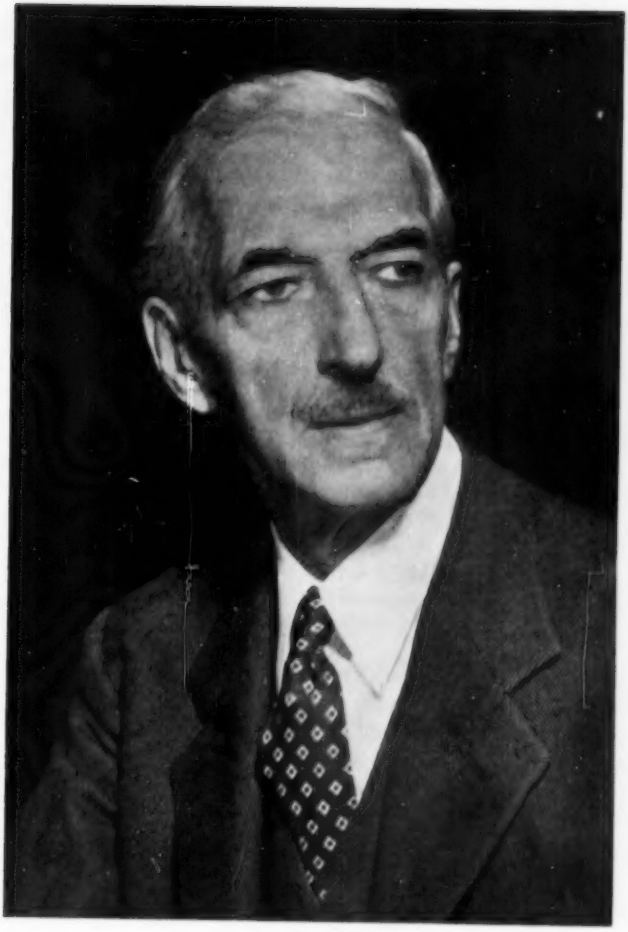
In 1932 Dr. Reed was admitted as a Fellow of the Royal Society of Canada. He served as Secretary of Section V for several years and was President of the section in 1942–43. In 1947 he was awarded the Flavelle Medal and in 1952 he was elected President of the Society. In 1953 he was awarded an LL.D. by the University of Saskatchewan, and in 1954 a D.Sc. by Acadia University.

When the Defence Research Board was organized after the war it became responsible for certain of the activities with which Dr. Reed had been associated during the war years. Wishing to avail itself of his experience the Board set up a laboratory within the Department of Bacteriology in 1947 with Dr. Reed as director. The work expanded to such an extent under his direction that the available space became inadequate and it was decided to build a new laboratory. This building was largely planned and its construction supervised by him, a task which gave him great satisfaction. The new laboratory was opened in 1953 under his directorship, which post he held until his death.

For forty years Guilford Reed was a member of the staff of Queen's University and to indicate the high regard in which he was held by his colleagues I could not do better than to quote from an appreciation of Dr. Reed written by Principal Mackintosh.

> Guilford Reed was among the most distinguished of our scientists at Queen's University. He was a ceaseless worker, accomplished, confident, and infinitely resourceful. Whether the laboratory was replete with equipment or primitive in arrangements, he got on with his experiments and produced significant results. He had wide scientific knowledge and acquaintanceships. Quiet and unassertive as a person, he was bold and confident as a scientist.
>
> We record with pride the work and achievements of Guilford Bevil Reed and gratefully acknowledge the rich heritage which his long and distinguished service has left to us.

JOHN ORR



Guilford Bevil Reed

Louis-Philippe Robidoux

1897–1957

LE soir même de sa mort, le jeudi 28 février 1957, nous remettions, au journal qu'il avait dirigé trente-six ans, cette esquisse:

"Penser dret et parler dret" . . . Lorsque, dimanche, je lui proposai cette formule comme le résumé de sa carrière, Robidoux scanda d'un mot son fraternel sourire: "Comme c'est bien cela!"

Sa rectitude d'esprit, il l'attribuait à ses maîtres de Saint-Charles, auxquels il témoignait une filiale vénération. La bonté de coeur qui s'y joignait, il en renvoyait toujours le mérite à sa femme "dépareillée."

Il aimait le beau dans la nature, dans les arts, dans les lettres. Dans sa page de rédaction, il ne tendait qu'à un but: amener ses concitoyens à goûter les belles choses. Il y dépensa trente-six ans.

Ses "Feuilles Volantes" et ses "Lueurs" resteront son testament intellectuel: mises à part les pages où l'humoriste évidemment s'amusait, les deux volumes constituent un code de morale fait de la sagesse qui les inspira, de la bonté qu'ils prêchent encore.

A la Section I de la Société royale, où deux Estriens se coudoyaient, on reconnaissait en lui l'élève de Montaigne, de Vauvenargues, de La Bruyère. Les intimes savent qu'il fut aussi le disciple de Veuillot.

Sur la pierre tombale du rude travailleur et du ferme chrétien que fut Robidoux, ces mots de l'épitaphe célèbre ne diraient que la vérité:

> "Dans ma lutte laborieuse
> La foi soutint mon coeur charmé;
> Ce fut donc une vie heureuse,
> Puisqu'enfin, j'ai beaucoup aimé."

Cette simple note appelle un développement. Né à Stanbridge près Granby, le 27 avril 1897, Robidoux était un terrien. Toute sa vie. il eut le goût du sol, la passion de la campagne, l'admiration surtout pour celle de l'Estrie (les anciens Cantons de l'Est). De là ces randonnées annuelles à travers ce pays de collines, dont la vue répétée ne le lassait pas. C'est elle qui lui dicta un jour cette pensée : « Un coin de terre grand comme la main peut résumer un immense territoire et toutes les passions qui assaillent ou ébranlent l'homme. » (*Lueurs.*)

De ce terrien, dont la propriété familiale eût peut-être fait un cultivateur, ses études secondaires firent un artiste avide de culture intellectuelle. Entré au séminaire S.-Charles Borromée de Sherbrooke en septembre 1914, il s'imposa bientôt par sa participation à toutes les manifestations littéraires de la maison. En raison de sa timidité naturelle, il n'y tint pas les rôles de premier plan; mais les cahiers collégiaux attestent que, parfait sous-ministre, il excellait à rendre compte de leurs travaux, parmi lesquels les siens n'étaient pas les moins appréciés. C'est là, au contact sans doute de l'universel M. Maltais surtout, qu'il contracta sa passion pour les maîtres français, La Fontaine, Vauvenargues, La Bruyère entre autres. Plus tard, il parlait volontiers des débauches de lecture qui occupèrent alors sa fébrile activité.

Quand, vers 1920, sonna l'heure de se lancer dans la vie, sa carrière était d'avance toute tracée. Il délaisserait les professions encombrées et lucratives pour adopter la seule qui, à cette époque, s'ouvrît aux intellectuels : il serait journaliste. Quelques essais tentés à Montréal, dans les journaux d'information, le convainquirent que sa voie n'était pas de ce côté. Son tempérament aussi réfléchi que timide, son désir d'associer les travaux de l'esprit aux articles d'actualité l'invitaient à rechercher une atmosphère plus calme. Aussi, en 1921, lorsque l'honorable Jacob Nicol l'appela à prendre la direction de son journal local, *La Tribune*, Robidoux saisit l'occasion comme une bouée de sauvetage. Il y demeura accroché pendant trente-six ans (1921–57).

Mais alors, laissant à ses camarades nouvellistes le souci du fait divers, il s'acharna à faire de sa page de rédaction, le seule qui lui tînt vraiment à cœur, un organe de culture pour ses lecteurs, un reflet de sa propre culture. Des 18 à 20,000 éditoriaux qu'il écrivit, beaucoup sans doute portaient sur les problèmes matériels ou sociaux: assistance publique, économie, politique, œuvres diverses. Mais sa préoccupation des valeurs spirituelles lui fit toujours remplir sa page de beaux poèmes à lire, de réflexions morales, de critiques littéraires. Peu de manifestations intellectuelles, qu'elles fussent de chez nous ou de l'étranger, particulièrement de France, le laissaient indifférent.

En vertu du même état d'esprit, il accueillait fraternellement le premier venu, dès lors qu'il révélait quelque disposition à la vie intellectuelle. Il acceptait volontiers de présider les réunions artistiques ou littéraires, d'y présenter ou d'y remercier les conférenciers et les vedettes. Toutes les sociétés vouées aux choses de l'art le comptèrent parmi leurs chefs ou leurs membres : Alliance française, Ecrivains canadiens, Société d'histoire locale, Concerts symphoniques, bibliothèque. Lorsque, le 4 juin 1951, nous l'admîmes à la Société royale du Canada, il crut avoir atteint le dernier sommet auquel il lui fût permis d'aspirer.

En raison toujours de cette tournure d'esprit, les livres lui paraissaient chose sacrée. Célibataire jusqu'en 1936, il consacrait à les lire presque toutes ses nuits, dans l'espèce d'antre qu'il occupait au journal, face à la chute mugissante du Magog. Sa bibliothèque contiendrait présentement 10,000 volumes, tous remarquablement habillés; mais il avait pour elle un tel respect que, de tous ses amis invités à la visiter, aucun, semble-t-il, n'y a jamais pénétré. Aux connaissances littéraires qu'il y puisait il ajoutait des notions d'art : chaque année, il consacrait ses vacances à des excursions vers les musées de Montréal, Québec, Toronto, Boston, New York.

. De cet homme d'esprit la vie sembla changer du tout au tout à partir de 1936. Ses articles, assez vifs de ton jusque-là sans être jamais agressifs, prirent une allure plus pondérée. De son propre aveu, il venait d'acquérir un sens de la mesure, une préoccupation de douceur et d'aménité qu'il ne se connaissait pas. Les valeurs surnaturelles, auxquelles il n'avait jamais été étranger, prirent le pas sur les valeurs même intellectuelles et acquirent à

Louis-Philippe Robidoux

ses yeux une importance primordiale. C'est qu'il venait d'épouser, à près de 40 ans, le 25 février 1936, Eva Dubuc, celle qu'il appelait « ma femme dépareillée, » « mon Egérie, » « l'ange de mon foyer ». Ce mariage tardif ne produisit qu'un fruit, un fils unique; mais il avait apporté au journaliste, surmené par la tâche, la paix des nerfs, la tranquillité de l'esprit, la vie de l'âme.

Est-ce cette Egérie qui le décida à donner à sa pensée, jusque-là confinée au journal, la grande publicité du livre? Influence de la compagne, insistance des amis, du soussigné entre autres : il se peut que ces diverses pressions se soient conjuguées pour vaincre sa timidité. Toujours est-il que ses *Feuilles volantes* (235 pp.), parues en décembre 1949, furent suivies, en décembre 1951, de *Lueurs* (200 pp.). Quant à ses *Poésies*, publiées vingt ans plus tôt, lui-même voulait qu'on n'en parlât point.

Les deux volumes révélaient le vrai Robidoux. Dans les deux sans doute, beaucoup de pensées servaient simplement d'exutoire à l'humour de l'auteur; dans *Lueurs*, beaucoup de paragraphes procèdent des *Libres Penseurs* de Veuillot et sont d'une ironie piquante. Dans l'ensemble, Robidoux y exalte les nobles qualités de l'esprit et du cœur; joies du savoir précis, amour du travail, douceur de l'amitié, solidarité familiale et humaine, pitié pour le déshérité, mansuétude surtout.

Or, la mansuétude est précisément le trait qui dominait chez lui: elle perçait à travers sa physionomie, son langage, ses gestes mêmes. Aussi, pour se consoler de sa perte, ses amis n'auront-ils qu'à se répéter le mot du Christ : « Bienheureux les doux, car ils posséderont la terre. » Ils pourront encore se renvoyer l'un à l'autre sur son compte les réflexions que Veuillot suggérait aux siens à son sujet :

« Dites entre vous : « Il sommeille;
Son dur labeur est achevé. »
Ou plutôt dites : « Il s'éveille;
Il voit ce qu'il a tant rêvé. »

EMILE CHARTIER

Georges Simard

1878–1956

EN la personne du R. P. Georges Simard, O.M.I., décédé le 2 novembre [illegible] à l'âge de 78 ans, la Société Royale du Canada perd un membre illustre, admis en 1940. Le défunt jouissait d'une très haute réputation comme théologien, philosophe, historien, homme de lettres et conférencier. Il était docteur en théologie et en philosophie.

Ce fils de la Baie-St-Paul incarnait, au sein de notre génération, la belle distinction rurale d'autrefois, à laquelle, chez lui, la science et la culture avaient ajouté un raffinement partout fort apprécié. Cet homme aux yeux flamboyants comme sa brillante intelligence était l'affabilité même.

Le Père Simard a publié, en plus de nombreux articles de revue, au moins six volumes d'une grande valeur, dont voici les titres : *Les Maîtres chrétiens de nos pensés et de nos vies*, *Etudes canadiennes* (éducation, politique et choses d'Eglise), *Maux présents et foi chrétienne*, *Les Etats chrétiens et l'Eglise*, *Les Universités catholiques* et *Pour l'éducation dans un Canada souverain*.

Si ce fervent apôtre de la vérité vivait encore, il aurait sûrement beaucoup à dire et à écrire en ce moment, car le cours actuel des événements illustre déjà la lucidité de ses regards sur l'avenir.

Cet éminent philosophe et théologien nourri aux sources les plus pures de l'humanisme chrétien était aussi un grand Canadien, capable de défendre ses opinions au moyen d'une argumentation qui ne laissait aucune échappatoire à ses contradicteurs, et cela écrit dans une langue vivante, facile et agréable.

Le Père Simard était l'un des Canadiens les plus loyaux à leur pays, mais il n'en défendait pas moins fermement le patrimoine moral hérité des ancêtres.

Bien peu de Canadiens avaient une conception aussi nette que lui de la Confédération canadienne et des obligations qui en découlent pour les deux éléments ethniques dont le mariage a donné naissance au peuple canadien—l'un des plus intéressants du monde contemporain.

Il avait cette fierté de race qui prend sa source non pas dans le sang, comme l'enseignait le belliciste Adolphe Hitler, mais dans l'intelligence humaine arrachée au matérialisme païen par les grands penseurs chrétiens tels que Augustin, Thomas d'Aquin et autres.

Educateur de grande classe, il avait assez confiance dans la force de la vérité pour l'affirmer partout, sans crainte et sans calculs mesquins.

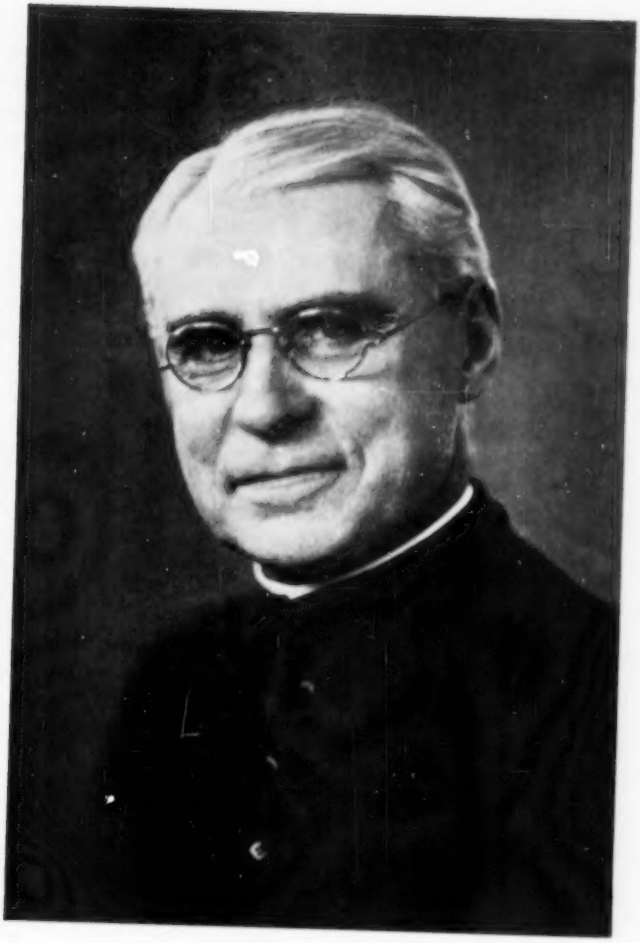
Tous les éducateurs de notre pays aimeront sans doute relire cette page écrite à leur intention par le Père Simard:

L'éducateur canadien enseignera notre histoire de trois siècles, les gestes de deux nationalités, le respect des croyances, des langues et des cultures de chez nous. Il réclamera la liberté pour deux Eglises, pour deux systèmes d'écoles, pour

deux façons d'aménager la vie sociale. Il n'oubliera pas de rappeler à tous les Canadiens indistinctement qu'ils doivent s'estimer et s'aimer réciproquement. Jamais, il ne désarmera les défenseurs des revendications légitimes; au contraire, il leur apprendra comment lutter avec intelligence et honnêteté, se souvenant que l'esprit est la première force des peuples, et l'injustice leur plus sérieux ennemi. Il aura toujours en vue que le Canada, de l'Atlantique au Pacifique et du Quarante-cinquième au Pôle Nord, est la terre vénérée des deux groupes qui le peuplent. Bref, il fera en sorte de préparer les siens à savoir durer et vaincre, en vue de vivre libres, non dans un isolement de plus en plus impossible, mais au sein des grandes unités que la guerre est en train de forger, sous nos yeux stupéfaits. A mon humble avis, ce qui pourrait être critiqué, dans un certain mouvement d'éducation nationale, c'est son orientation trop insuffisante vers la finalité canadienne.

Cette page d'une inspiration si hautement canadienne, on peut la considérer comme le testament patriotique d'un esprit supérieur, qui a beaucoup aimé les Canadiens de toute origine ethnique et leur a indiqué avec éloquence la voie de la paix et du bonheur collectif, dans une patrie que des millions d'hommes leur envient.

EUGÈNE L'HEUREUX



GEORGES SIMARD

James Malcolm Swaine

1879–1955

THE career of one of Canada's most distinguished scientists and administrators, Dr. Malcolm Swaine, ended quietly in the early morning of November 11, 1955. He had lived to enjoy ten years of retirement at his home in the west end of Ottawa where he and his wife kept open house for the host of friends made in forty years of public service.

Dr. Swaine was born in Barrington, Nova Scotia, the son of Captain James Swaine and his wife Sophia Hamilton. Following his high school training in Yarmouth, he attended the Provincial Normal College at Truro. He taught school in South Ohio, in Yarmouth County, for two years and then entered the Nova Scotia Agricultural College for the first part of his agricultural course. After teaching for a short time at Antigonish, he left for Cornell University, where he received his B.S.A. in 1905 and his M.S.A. in 1906, and remained as assistant in entomology and zoology while doing a year's work toward his Ph.D.

From 1907 to 1912 he was lecturer in entomology and zoology at Macdonald College. His studies on bark beetles attracted the attention of Dr. C. Gordon Hewitt, then Dominion Entomologist. Dr. Hewitt invited him to Ottawa in 1912 to become Officer-in-Charge of Forest Insect Investigations. Subsequently he completed his thesis on Canadian bark beetles and received his Ph.D. from Cornell in 1915, becoming the recognized authority on *Scolytidae*. In 1919 he was made Chief of the Division of Forest Insects, and in 1923 became Associate Dominion Entomologist.

During the quarter of a century following his appointment in 1912, Dr. Swaine laid the foundations of forest entomology in Canada. He was that happy combination of scientist, naturalist, and woodsman that sees a problem, understands what must be done, and does it. His work on the control of the outbreak of the European spruce sawfly is a classic example. He won the co-operation of the lumber and pulpwood companies in providing a scouting service, established that the pest was a European species, promptly learned that it was controlled by parasites in Czecho-Slovakia, and, through the Imperial Institute of Entomology and the Empire Marketing Board, soon had men in the field to collect parasites for propagation at Belleville, Ont. The release of these parasites, and the subsequent appearance of a disease of the sawfly, which probably came in with the parasites, resulted in the control of a pest that threatened the entire spruce forests of North America.

On April 1, 1934, Dr. Swaine left the specialized field of forest entomology to become Director of Research for the Department. Dr. H. Barton, then Deputy Minister, was feeling his way toward a reorganization of the Department. Dr. Swaine was the first, and for some time the only, director with doctorate training in science, and on him fell the responsibility of examining the research programme of the Department and assisting in the general

reorganization. On the reorganization of the Department in 1937, he was appointed Director of the newly formed Science Service. Expansion of the Service was slow during the years of the Second World War, but the foundations were laid for the rapid development that has taken place since.

Recognizing that good research work cannot be done without well-trained staff, and mindful of his own difficulties in financing post-graduate training while supporting a family, Dr. Swaine initiated the plan of educational assistance through "transfer of work" to Canadian, American, and British universities. This was the beginning of the present educational leave policy, which is used extensively by Agriculture.

During his long period of service, Dr. Swaine represented the Department with distinction at many scientific conferences. He was an early and ardent supporter of the Commonwealth Agricultural Bureaux and was for many years the Canadian Liaison Officer. He was an active member of many learned societies, and was elected a Fellow of the Royal Society of Canada in 1928. During the Second World War he served as a member of the Agritultural Supplies Board, and was awarded the C.B.E.

Dr. Swaine retired from active duties in October, 1945, and lived quietly with his wife at their Ottawa home. Mrs. Swaine was the former Mary Creelman of Truro, N.S. On March 28, 1955, the couple celebrated their golden wedding anniversary, when they were each presented with a wrist watch, and with a television set for their home. Their daughter Alison, Mrs. M. Timonin, Mobile, Alabama, was present for the occasion.

The contribution of Dr. Swaine to the development of the biological sciences in agriculture and forestry has been great, but perhaps no greater than the effect of his personal influence on the men who worked with him. He was a gifted teacher who had a rare quality of enthusiasm which awakened the interest of his students. One of them once was heard to say bitterly that he was quite unable to take any notes because he was so interested in listening to the speaker. In his day at Cornell training for a Ph.D. included the humanities as well as science, and Dr. Swaine developed and retained a catholicity of interest in men and affairs that enabled him to find common ground with the specialist and the layman. To sit in his study and read archaeology and ancient history, to make pastel paintings of old sailing ships (and he knew their rigging from stem to stern), and to talk with old friends not only of the past but of the future of agricultural science in Canada were hobbies for Dr. Swaine.

H. L. TRUEMAN

JAMES MALCOLM SWAINE

Otis Johnson Todd

1883–1957

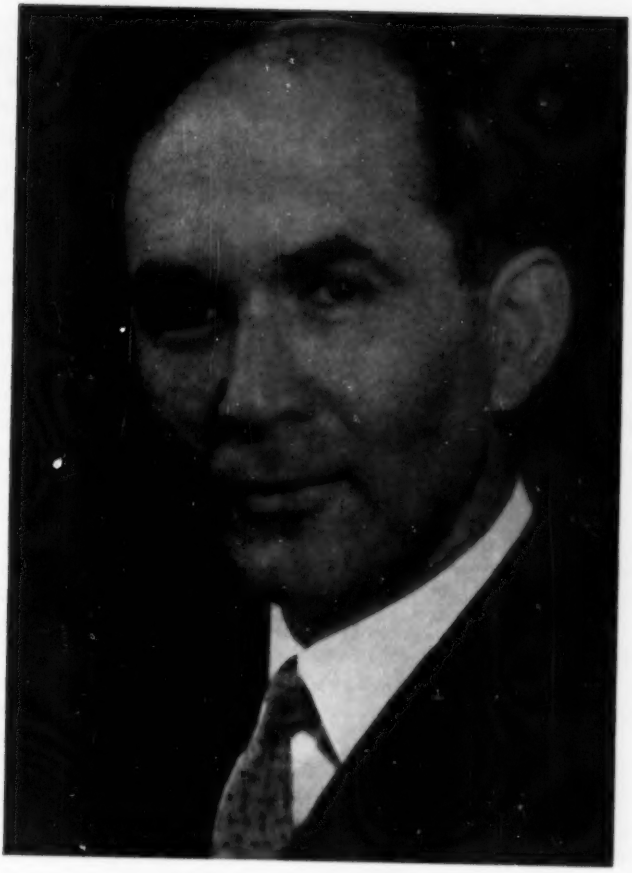
OTIS JOHNSON TODD was born in Garland, Pa., March 27, 1883. He was educated at Harvard, from which he received his A.B. in 1906. His first teaching appointment was at Whitman College, in Walla Walla, Wash., where he taught Greek for six years. He then returned to Harvard for postgraduate study, and was granted his Ph.D. in 1914. After teaching for three years at Carleton College, in Northfield, Minn., he joined the then recently established University of British Columbia, as Assistant Professor of Classics, in 1918. He was appointed Professor of Greek in 1922, and Head of the Department of Classics in 1941. Upon his retirement in 1949 he was made Professor Emeritus of Classics. He died in Vancouver on January 16, 1957.

Dr. Todd was one of the most modest and retiring of men, but both his students and those who consulted his published works discovered quickly that he was a scholar of great erudition and integrity. The Classics were for him something vividly alive, which he enjoyed immensely, and which he could teach others to appreciate. As his articles testify, he explored many Classical byways not only with care and patience, but with humour and imagination. In 1922 he edited for the Loeb Classical Library the text and a translation of Xenophon's *Banquet* and *Socrates' Defence to the Jury*. His major work was his monumental *Index Aristophaneus*, published by Harvard University Press in 1932. "An index to a Greek and Latin author," as one of his students has written, "is an indispensable tool to the scholar; but few have the perseverance to complete such a work. Todd possessed this quality, and, in addition, the passion for accuracy without which this kind of book is useless."

Dr. Todd's interests were far wider than a casual acquaintanceship would suggest. In *Who's Who* he gave his recreations as tennis, badminton and fishing. These, it is true, were the sports in which he participated expertly almost to the close of his life; but to those who knew him on the university campus he was above all a football (soccer) enthusiast. He frequently visited the practice fields, and the worst of weather did not prevent him from attending games. In 1947–49 he was President of the Canadian Football Association, and thereafter he was its Honorary President. (It would be interesting to know how many of the fellow scholars who knew him as President of the Classical Association of the Pacific States, and as a Member of the Council of the Classical Association of Canada, were aware of this.)

He had a great capacity for quiet friendship, and to this his sense of humour—keen, though often well concealed—contributed much. It is to be hoped that someone has been able to collect a few of his epigrams, limericks and Latin cross-word-puzzles. Only a Classicist of vast knowledge could have produced them, and they would add a piquant touch to the scholarship for which he will surely be remembered.

W. KAYE LAMB



Otis Johnson Todd

Samuel Ernest Whitnall

1876–1950

SAMUEL ERNEST WHITNALL, formerly professor of Anatomy at McGill University and at the University of Bristol, died in England on February 19, 1950, at the age of 73.

Dr. Whitnall was born on March 30, 1876, at Eccles in Lancashire. He was Welch Memorial Prizeman in 1904 in Magdalen College, Oxford. His medical training was obtained at St. Thomas's Hospital, London, where he qualified in 1908. He took the M.D., B.Ch. degrees at Oxford in 1909. He became interested in human anatomy quite early, since he was University demonstrator in Anatomy from 1908–1914, under Professor Arthur Thomson at Oxford. In collaboration with Thomson he laid the foundation for his future work on the anatomy of the eye and the orbit. He joined the Anatomical Society in 1910 and at that time published several papers on his preferred subject. His work was careful and thorough and soon established his reputation as a competent anatomist.

During the first World War he served as a captain with the R.A.M.C. in England and France. Towards the end of the war he acted as administrator to the Orthopaedic Hospital in Oxford. After demobilization he was appointed Robert Reford Professor of Anatomy at McGill University, where he spent the next 15 years. In 1921 he published a monograph entitled *The Anatomy of the Human Orbit*. This book soon became a standard work of reference and definitely established Whitnall's reputation. This work won him the Nettleship Prize in 1923.

In 1922 his interest in Gross Anatomy prompted him to write a brochure of 46 pages entitled *The Study of Anatomy*. It was considered to be a sound piece of writing on the subject and was reissued in a new edition in 1933 in London.

Dr. Whitnall delighted in a type of humour which received wide recognition in England. The older generation of Englishmen will remember him as "Tingle." Here is a quotation from his obituary in the *Journal of Anatomy* (an English publication): . . . "In the guise of Tingle he stands out as the man who had to perfection that gift of typically English humour perpetually enshrined in the pages of Punch, a journal to the columns of which he made many characteristic contributions."

Another quote from the same source rightly states: "When Whitnall went to Montreal his particular brand of humour was not so well appreciated, and his little pamphlet entitled *The Architectonics of the Monogamal Oestrous Cycle in the Greater Pifflecock* (Gallinopunk gigas occidentalis) was regarded in certain academic circles with some disfavour. This publication, which has no date nor printer's imprint, was issued in 1932. It consists of 15 pages . . . written under the pseudonym of "Stodge D. Loquax of the Wishful Destitute of Anatomy. Pah." A brief quotation from the In-

troduction will make clear the real purpose of the author in ridiculing the dodder growth of verbalism that entangles modern scientific writing: "The present prospective preliminary study was made with a view to correlating the standardization of the effects of vestigial dissemination in co-parental dissimilarities, in so far as pre-constructive concepts of our primordial principles permit and then some."

In 1935 Whitnall left McGill University to occupy the Chair of Anatomy at Bristol, England, a post that he held until his retirement in 1941.

Dr. Whitnall deserves credit for a meticulous organization of the Department of Anatomy at McGill and for leaving for all those who knew him the memory of a competent, if somewhat eccentric, teacher of Anatomy.

C. P. LEBLOND

Samuel Ernest Whitnall

Edouard Fabre Surveyer

1875–1957

THE Honourable Edouard Fabre Surveyer, Q.C., LL.D., Chevalier de la Légion d'honneur, prominent jurist and senior member of the Montreal Superior Court, an active member of the Royal Society of Canada for thirty-seven years, died at his home, in Outremont, on May 20, 1957, after an illness of two months. The last time he went out was in the last week of January to attend a function of Section I of the Royal Society.

Born in Montreal on March 24, 1875, he was the son of Louis J. Arthur Surveyer (1841–1917), a merchant, and of Hectorine Fabre (1853–1923). Judge Surveyer's mother, daughter of Edouard Raymond Fabre (1799–1859), mayor of Montreal in 1850, was the youngest sister of Lady Cartier (1828–1898) who was the wife of Sir George Etienne Cartier, of Msgr. E. C. Fabre, first Archbishop of Montreal, and of the Honourable Hector Fabre, a journalist, senator, and the first permanent Canadian Commissioner-General in Paris.

E. F. Surveyer was educated by the Jesuits at Collège Sainte-Marie in Montreal (B.A. and Gold Medal for Philosophy, 1893). He studied Law at McGill University (B.C.L., 1896) and at the Université Laval de Montréal (LL.L., 1896). Called to the Quebec Bar the same year, he spent the next year in Europe, where he took part in the first International Congress of Lawyers at Brussels. His first trip to Europe, in 1896, was to be followed by nearly twenty others, the last in 1955.

In active practice in Montreal until his appointment to the Bench, he was the partner of, among others, the Honourable Thomas Chase Casgrain, P.C., R. D. McGibbon, Victor E. Mitchell, Percy Ryan, Errol McDougall, Alexandre Chase Casgrain, and later of Albert W. Atwater and William L. Bond. He was created a King's Counsel in 1909.

Appointed a Judge of the Superior Court, for the District of Montreal, in 1920, he was for thirty-five years a familiar figure in the Quebec courts and in legal circles. Possibly the most important case he ever presided over was the suit, in 1932, of *Lady Davis* v. *Lord Shaughnessy*, where the most prominent lawyers of St. James Street represented the parties. The trial lasted more than twenty days, and the mountain of evidence would have discouraged a less methodical mind. But ten days after its conclusion, the learned Judge had rendered his judgment, which was affirmed in the Quebec Court of Appeals and in the Privy Council. Mr. Justice Surveyer retired from the bench in 1955.

A lecturer on Pleading and Practice at McGill University from 1905 to 1917, he became, in 1929, a professor in Criminal Law and Procedure, and in 1937, in Civil Law.

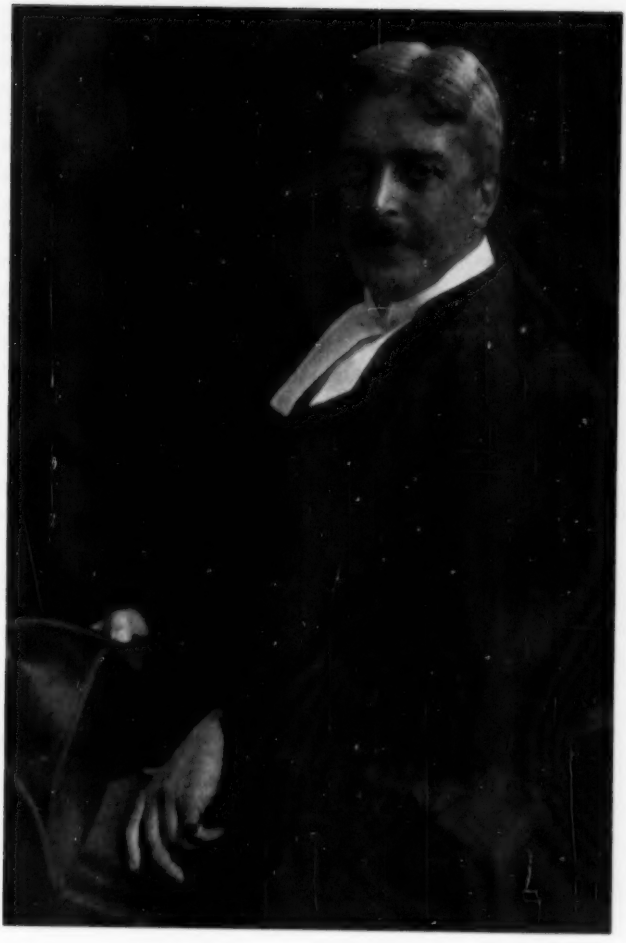
Editor of the *Quebec Practice Reports* for nearly sixty years, from 1898 to 1955, he was the first secretary, 1914–27, of the Canadian Bar Association, and a member of the Executive Committee under the presidency of

Hon. F. Philippe Brais, Q.C. He was made a life member in recognition of his prominent services to the Association.

He was one of the special reporters at the International Congresses of Comparative Law at the Hague in 1922 and 1937. He delivered a series of lectures before the Academy of International Law at the Hague in 1935, and a series of lectures on Civil Law at Dalhousie University, Halifax, N.S., in 1934.

From 1933 to 1956, he was Quebec representative on the Canadian Historic Sites and Monuments Board. He was a member of the Canadian Historical Association, the Société historique de Montréal, the Société des Ecrivains canadiens, the Montreal Pen and Pencil Club, the PEN Club, Montreal Centre, the University Club and the Cercle Universitaire of Montreal, and of l'Union Inter-Alliée (Paris). A charter member of the Alliance française of Montreal, 1903, he was vice-president for twenty-five years, 1910–35, and a councillor, 1934, of the Federation of the Alliances françaises of the United States and Canada. President of the Quebec section of the Canadian Authors Association, he was also vice-president for Canada. He was president of the Société des Amis de Maria Chapdelaine and charter member, 1912, of the Comité France-Amérique (Paris and Montreal). He was a charter member and secretary of the Montreal Junior Bar, 1898, and president in 1903, a charter member of the Montreal Canadian Club, 1905, and president in 1909; vice-president, Montreal section, of the Société de Géographie de Paris, 1924; and president of the Institute for Italian Culture, 1936. He was elected to the Royal Society of Canada, Section II, in 1930.

Director of the Society of Comparative Legislation in London, 1916, member of the Office International de Législation (Paris), he was created Officier d'Académie (France), 1909, Officier de l'Instruction publique (France), 1914, and Chevalier de la Légion d'honneur in 1928, Knight of the Crown of Italy, in 1938, Doctor of Laws *honoris causa* of the University of Louisiana in 1938, and of Université de Montréal in 1954. Judge Surveyer was a prolific writer and contributor to learned periodicals, such as the *Transactions of the Royal Society of Canada*, the *Revue légale*, the *Revue de Droit*, the *Revue du Barreau*, the *Revue du Notariat*, the *Canada Law Journal*, the *Tulane Law Review* (Louisiana). Only a few of his numerous publications, mainly in the fields of law and history, are mentioned here. He was the editor of *Code de procédure civile de la Province de Québec* (1912), of the *Code Civil de la Province de Québec* (1913), and the author of *Les Sociétés commerciales étrangères de la Province de Québec* (1903), *The First Parliamentary Elections in Lower Canada, 1792* (Montreal 1927), *Husband and Wife in Louisiana and Quebec* (Shreveport, Louisiana, 1928), *The Early Years of James McGill* (Montreal, 1929), "From Surgeon's Mate to Chief Justice: Adam Mabane" (1930); *Dickens in France* (London, 1932); *A Comparison of Delictual Responsibility in Law in the Countries Governed by a Code* (New Orleans, 1933); "Le Chevalier Johnstone" (for the Franco-Scottish Society, 1935);



Edouard Fabre Surveyer

Principes généraux de la Dévolution successorale (1937); "Jean-Antoine Panet, 1751–1815" (1933); "Charles-Ovide Perrault, 1809–1837" (1937); "The Honourable William Renwick Riddell, 1852–1945" (1945); "Joseph Bouchette, 1774–1841" (1940), etc.

He was the co-author, with Francis J. Audet, LL.D., F.R.S.C., of *Les Députés au Premier Parlement du Bas-Canada, 1792* (Montréal, 1946), volume I, and of *Les Députés de Trois-Rivières* and of *Saint-Maurice*, 1792–1808, in the series "Pages Trifluviennes," 1933, 1934, and with Pierre Beullac, Q.C. of *Le Centenaire du Barreau de Montréal*, Montréal, 1949.

He was married in Montreal, in 1906, to Elodie Barnard (1875–1953), a daughter of Edward Barnard, Q.C. (1831–1901). He is survived by a son, Fabre Surveyer, a lawyer in Quebec; two daughters, Françoise, wife of Ashton B. Tobin, Q.C., of Compton, Que., and Hélène, wife of Lieut.-Colonel J. Darley Le Moyne, of Outremont, formerly of the 6th Duke of Connaught Royal Canadian Hussars and a grand-nephew of Sir James McPherson Le Moyne, first President-General of the Royal Society of Canada, in 1892; three sisters, Marie, Eugénie (widow of Senator N. K. Laflamme, Q.C., a former president of the Montreal Bar), and Thérèse (widow of Jules Fournier, journalist); and a brother, Dr. Arthur Surveyer, C.E., Sc.D., of Montreal; three grand-daughters, six grandsons, two of whom, Edmund Tobin and Richard Le Moyne, are indentured as law students at the Université de Montréal. He had another brother, Paul (1881–1936), also a lawyer in Montreal.

Of lofty stature, with abundant white hair, a fair complexion, blue eyes, a soft voice, witty, with the best of humour, calm and courteous manners and always obliging, to young people particularly, his presence at conventions and assemblies was a delight to his friends. There was no more accomplished and better representative of the Quebec bourgeois and legal tradition and of the bi-ethnic and bi-lingual culture of Canada in his generation.

JEAN-JACQUES LEFEBVRE

APPENDIX C

TITLES AND ABSTRACTS OF PAPERS PRESENTED AT THE ANNUAL MEETING

PROGRAMME OF PAPERS

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SECTION I. LITTÉRATURE, HISTOIRE, SCIENCES SOCIALES, ETC.

I. L'Époque 1910–1935

1. Aux sources du présent. Par Léon Lortie, M.S.R.C.

En fixant aux environs de 1910 et de 1935 les limites d'un quart de siècle, on peut esquisser la physionomie d'une époque très prometteuse et particulièrement riche en réalisations fécondes. C'est en effet au cours de ces années qu'ont vu le jour les principales initiatives qui ont façonné l'aspect moderne du Canada français. En même temps que la littérature se renouvelait, la recherche scientifique, aussi bien dans les sciences naturelles que dans les sciences de l'homme, commençait d'exister; l'économique révélait son emprise, les beaux-arts et la musique bénéficiaient d'appuis officiels et l'enseignement s'orientait dans de nouvelles voies. Aux pionniers qui furent responsables de ce nouvel état de choses, on voit s'apprêter à succéder un groupe plus jeune dont ce quart de siècle voit les années d'apprentissage et les premiers travaux. Ce tableau d'ensemble est une introduction à une série de travaux qui examineront chacun des aspects particuliers de cette époque.

2. L'enseignement. Par Louis-Philippe Audet, M.S.R.C.

Le domaine de l'éducation a subi, durant cette période, des modifications profondes. Dans le secteur primaire, il convient de signaler la revision des programmes en 1905, 1923 et 1929 (il y en aura d'autres en 1937, 1939, 1948 et 1956) et une reclassification des cours d'études, de même que la querelle spectaculaire relative à l'enseignement obligatoire. Les écoles normales, pour leur part, connaissent une importante expansion; il en est de même de l'enseignement ménager et surtout de l'enseignement spécialisé. L'enseignement classique n'échappe pas, lui non plus, à l'esprit critique de ceux qui voudraient tout rénover : témoins les polémiques autour de l'enseignement des Sciences et les campagnes périodiques contre le grec; il faut y ajouter également les croisades contre l'enseignement classique en général qu'on veut rendre responsable, en certains milieux, de la carence de spécialistes canadiens de langue française dans les domaines scientifique, commercial ou industriel. Enfin, l'Université connaît, elle aussi, une expansion que la guerre mondiale 1939–45 viendra intensifier et décupler dans le domaine scientifique particulièrement.

3. Les écrivains et la vie intellectuelle. Par Jean Bruchési, M.S.R.C.

Les écrivains. L'auteur évoque la querelle du régionalisme et de l'exotisme littéraires, les chapelles, les cénacles et les petites revues.

La vie intellectuelle. Quelques remarques sur l'Université de Montréal et sur l'essor de l'Université Laval. L'auteur parle ensuite des prix David, des bourses d'Europe, des anciens d'Europe et enfin des prix d'action intellectuelle de l'A.C.J.C.

Section I

4. La langue française et les techniques nouvelles. Par Pierre Daviault, M.S.R.C.

Le deuxième quart du 20e siècle se caractérise par l'essor des techniques issues de découvertes scientifiques qui transforment notre existence. Très souvent mises au point, ou en tout cas diffusées d'abord, aux Etats-Unis, ces techniques ont donné naissance à un vocabulaire anglais qui, débouchant dans le langage courant, menace de s'installer dans la langue française, en France comme au Canada. Toutefois, des groupements se sont formés en France pour combattre cette invasion et leur œuvre trouve un certain écho au Canada. Il importe au plus haut point de connaître cette œuvre et de nous en inspirer.

5. Trente ans d'histoire de l'artisanat et des arts appliqués du Québec. Par Jean-Marie Gauvreau, M.S.R.C.

C'est un sujet qui a fait l'objet de plusieurs communications en ces dernières années L'auteur croit utile d'y revenir puisqu'on s'applique, pour ne pas dire qu'on s'acharne, dans des discussions télévisées et des commentaires radiophoniques, à nier leur existence et même leur utilité. On aurait tort à chercher dans ce texte matière à polémique. C'est bien au contraire, un exposé objectif de faits et de réalisations indéniables, qui tend à démontrer que dans notre vingtième siècle, même si, en regard du passé, les conditions économiques sont bouleversées, l'artisanat et les arts appliqués occupent, doivent occuper et occuperont toujours une place prépondérante autant qu'indispensable à nos aspirations culturelles. Sinon que l'on procède systématiquement à l'extinction des feux traditionnels de notre groupe d'expression française en Amérique. Après cet exposé, si l'on craint que l'auteur ne se batte avec des moulins à vent, il prie ses confrères de le convaincre du contraire.

6. Le théâtre au Canada français. Par Emile Legault. Présenté par Adrien Plouffe, M.S.R.C.

La relative jachère qui avait suivi l'activité théâtrale des années 1900. La fondation des Compagnons, en 1937, marque indiscutablement une date : progressive initiation dramatique du public et d'une génération de comédiens à un répertoire de qualité. L'influence de Copeau au chapitre du style. Fondation, un peu plus tard, de l'Equipe dirigée par Pierre Dagenais. M. Gratien Gélinas, cas d'espèce. L'actuelle prolifération de comédiens attirés par la scène vivante, en réaction contre l'aspect ingrat de la télévision. Invasion massive des salles de théâtre par le grand public. Parallèlement aux comédiens, rapide montée de décorateurs et de dessinateurs de costumes dont quelques-uns de grande classe. Le T.N.M. et le Théatre-Club comparables aux meilleures compagnies françaises. Nous avons un public; nous avons les metteurs en scène et les comédiens. Il reste un problème de salles.

7. Un demi-siècle de vie politique. Par Eugène L'Heureux, M.S.R.C.

Notre vie politique se ressent de l'éducation civique et démocratique insuffisante que nous avons reçue. Il serait probablement vain de rechercher les responsables de cet état de choses, parce que la faute dont nous subissons les conséquences est collective. Les dénonciations risqueraient même d'être entachées d'injustice. Ce qui est pratique et urgent, c'est de repenser notre éducation civique, puis de la refaire. — Nos idées politiques sont-elles bien celles d'un peuple adulte ? Aurions-nous mieux réussi en dehors de la Confédération canadienne ? — Ce n'est tout de même pas une faillite complète. Et les motifs d'espérer ne manquent pas.

8. Les débuts d'une nouvelle ère : les sciences. Par Léon Lortie, M.S.R.C.

Longtemps négligé, l'enseignement des sciences exactes et naturelles finit par s'imposer vers 1920, grâce à l'action de quelques pionniers qui avaient, de façon isolée, poursuivi des études scientifiques et le goût de la recherche. La fondation de l'Ecole de chimie de l'Université Laval et celle de la Faculté des sciences de l'Université de Montréal furent des dates importantes à cet égard. Des polémiques retentissantes eurent lieu à propos de l'enseignement des sciences au cours classique. La fondation de sociétés scientifiques et celle de l'ACFAS consolidèrent les positions des tenants d'une formation scientifique.

9. Les précurseurs de l'art moderne. Par Gérard Morisset, M.S.R.C.

Avant la fin de la première guerre mondiale, on ne constate aucune tentative de rajeunissement des arts dans la province de Québec. La création des bourses d'étude en France et des écoles des Beaux-Arts (1922) et aussi l'exposition des Arts décoratifs de Paris (1925), ont déclenché le mouvement actuel. En architecture, Ernest Cormier et Paul Rousseau ont donné l'exemple. En peinture, les noms de James-Wilson Morrice et d'Alfred Pellan s'imposent par leur rayonnement; j'y ajouterais celui d'un isolé, Marc-Aurèle Fortin. En sculpture, Henri Hébert a tenté de renouveler le monument commémoratif et la statuaire, pendant que la sculpture populaire prenait une certaine vogue à la faveur de la crise économique de 1929. C'est dans les arts décoratifs que l'utilisation de certaines techniques nouvelles a contribué au renouvellement des formes et de l'esprit décoratif; à ce point de vue, l'action de l'Ecole du Meuble a été décisive.

10. La sociologie de 1910 à 1935. Par Arthur Saint-Pierre, M.S.R.C.

Etat de la question au tournant du siècle. Libéralisme économique. Ecole de LePlay. Catholicisme social. Influences françaises et réalisations canadiennes. L'Association catholique de la jeunesse canadienne-française : programme, méthode, enquêtes, rapports. L'Ecole sociale populaire et les Semaines sociales : publications. L'Action sociale catholique : querelle de l'intégrisme. Les Caisses populaires : coopération. L'Unionisme international et national. Le syndicalisme catholique : origine, évolution.

11. La musique : influence de Léo-Pol Morin. Par Jean Vallerand, M.S.R.C.

Le Canada français a longtemps eu la réputation de s'inspirer, avec cinquante ans de retard, des grands courants esthétiques de la pensée artistique européenne. En se faisant chez nous l'ambassadeur de la musique française contemporaine, Léo-Pol Morin a été un des artisans de notre maturité culturelle.

II. Divers

Charles Mondelet et l'éducation. Par Louis-Philippe Audet, M.S.R.C.

C'est en novembre 1840 que Charles Mondelet commença la publication, dans le *Canada Times* de ses Lettres sur l'Education élémentaire et pratique. Il y en eut quarante-sept : leur but était de préparer les esprits à la mise en œuvre d'une nouvelle loi scolaire, la loi 4 et 5 Vict., ch. 17–18, sanctionnée le 18 septembre 1841. Pour mieux apprécier l'importance de cette campagne de presse, il convient de rappeler : (*a*) qui était Charles Mondelet; (*b*) quelles étaient ses idées pédagogiques; (*c*) dans quelle mesure elles influencèrent la loi scolaire de 1841.

Section I

Tête de pioche. Par Cécile Chabot, M.S.R.C.

Un texte inédit de la série des Contes du cheval vert.

Alfred-Norbert Provencher. Par Donatien Frémont, M.S.R.C.

Alfred-Norbert Provencher (1843–1887), qui fut l'un des plus brillants journalistes de son temps, a subi le sort de la plupart de ses confrères : son nom est aujourd'hui presque oublié. A vingt-deux ans, il était rédacteur en chef de la *Minerve* et secrétaire de la rédaction à la *Revue Canadienne*. Après un intermède de dix années comme fonctionnaire à Paris et à Winnipeg, il revint au journalisme et mourut dans sa quarante-cinquième année. Un esprit original, studieux et très cultivé. Un précurseur qui prêcha l'essor économique, l'orientation de la jeunesse instruite vers les carrières industrielles et commerciales.

Les universités canadiennes. Par Olivier Maurault, M.S.R.C.

L'auteur passe en revue les universités canadiennes, expose leur statut vis-à-vis des divers gouvernements provinciaux et leurs moyens de vivre, et décrit quelques-unes d'entre elles. Il passe ensuite aux études qu'on y fait. Prenant comme point de départ l'université de Montréal, dont il énumère les facultés et les écoles et dont il explique les programmes, il montre en quoi les universités anglo-canadiennes diffèrent des universités canadiennes-françaises et en quoi les unes et les autres se ressemblent. Dans une troisième partie, l'auteur examine la vie des professeurs et des étudiants sur le "campus", leurs activités sociales, artistiques et sportives.

L'interview imaginaire ou la recherche de la vérité. Par Adrien Plouffe, M.S.R.C.

Théophraste Boivin, journaliste au "Lundi-Midi," va interviewer, à Loufoqueville, M. Parfait Boileau, un ardent partisan de l'abstinence totale. Notre reporter s'amène avec une compagne de travail, qu'il présente comme sa femme, souffre-douleur d'un alcoolique! Il prétend qu'il veut se renseigner sur la façon d'entrer dans l'association antialcoolique de M. Boileau. Après une discussion animée, on revient à Montréal et Théophraste Boivin publie dans "Lundi-Midi" un article réaliste et sensationnel qui fait beaucoup de bruit dans le Landerneau montréalais.

SECTION II. ENGLISH LITERATURE, PHILOSOPHY, SOCIAL SCIENCES, ETC.

Monday, June 10

10.00 A.M.—General Meeting of the Society.

11.00 A.M.—(1) Presidential Address. By W. Kaye Lamb, F.R.S.C.
(2) Business meeting.

2.00 P.M.—General Symposium with Sections 1, 3, 4, and 5.

Tuesday, June 11

9.30 A.M.—Symposium: "The Theatre, as It Reflects Social Life and Institutions."

1. The Age of Molière. By C. D. Rouillard, F.R.S.C.

To what extent does the classical theatre in France, while primarily preoccupied with the general and universal in human nature, nevertheless concern itself with the contemporary scene, and consequently illuminate our understanding of the period? The work of Molière will be used as a centre for the discussion of this question.

2. The Victorian Age in England. By F. E. L. Priestley, F.R.S.C.

This paper will suggest some of the limitations inherent in dramatic literature considered as social document by discussing under what conditions, in what manner, and to what extent drama reflects the society in which it is produced. Nineteenth-century English drama will be used as main illustration.

3. The Present Scene in America. By Earle Birney, F.R.S.C.

This paper begins by naming certain "social and economic forces and political institutions" in North America today which seem to be "reflected" in drama—such as democracy, big business advertising, United Nations internationalism, atomic "defence" and its attendant mass fears, and the drive towards "the conquest of space." It then applies these concepts to the subject in hand, treating the latter very widely to include film, television, and radio drama. Finally, it considers what is peculiar or different about social reflections in Canadian drama and comes to some conclusions as to whether the difference in Canadian stage-radio-television theatre reveals anything about Canadian social-economic-political forces as distinguished from American, whether the differences are worth encouraging or discouraging, and how.

2.00 P.M.—General Symposium with Sections 1, 3, 4, and 5.

Wednesday, June 12

2.00 P.M.—General Symposium with Sections 1, 3, 4, and 5.

Thursday, June 13

9.30 A.M.—Business Meeting.

SECTION III. MATHEMATICAL, CHEMICAL AND PHYSICAL SCIENCES

Monday, June 10

11.15 A.M.—Business Meeting of Section.

Tuesday, June 11

9.30 A.M.—Presidential Address and Symposium on Symmetry.

1. H. S. M. Coxeter, F.R.S.C. Crystal Symmetry and its Generalizations.
2. W. Opechowski. Symmetry and Interactions between Elementary Particles.
3. G. F. Wright, F.R.S.C. The Symmetry Sense in Chemistry.

Wednesday, June 12

9.00 A.M.—Contributed papers.

4. Product representations of S_n and $GL(d)$. By G. de B. Robinson, F.R.S.C.

The close relationship between the representation theory of the symmetric group S_n and that of the full linear group $GL(d)$ has long been known. Only recently has the reduction of the *inner* (x) and *outer* $(\cdot)$ products of two representations of S_n been thoroughly understood. If all the factors are taken to be the same we obtain the *symmetrized inner* $\otimes$ and *outer* $\odot$ products, whose reduction is much more complicated but can be carried through in many particular cases. We consider here the general methods which are applicable.

5. Duality for Polygons in n-Space. By Douglas Derry, F.R.S.C.

Let P_n be a closed polygon in real projective n-space with vertices $V_1, V_2, \ldots, V_r$. The intersection points of P_n with a hyperplane H are defined to be the vertices of P_n in H together with the points of P_n in H which are isolated. The purpose of the paper is to show that if no hyperplane H contains more than n intersections with P_n then a system of hyperplanes can be associated with each P_n the dual of which satisfies the same conditions as P_n.

6. A Generalization of the Marriage Problem. By N. S. Mendelsohn, F.R.S.C., and A. L. Dulmage.

Let $a_1, a_2, \ldots, a_n$ and $b_1, b_2, \ldots, b_m$ be two sets of elements. Let R be a dyadic relation connecting an a with a b. A pair (a,b) is called an incidence if the relation R holds for a and b. A set S of incidences

$$(a_{q_1}, b_{r_1}),\ (a_{q_2}, b_{r_2})\ \ldots\ (a_{q_k}, b_{r_k})$$

is called regular if no a or b appears more than once in the set. The following theorem is proved. A necessary and sufficient condition that a regular set S of incidences exist in which $a_1, a_2 \ldots, a_r$ and $b_1, b_2 \ldots, b_s$ appear is : for $k = 1, 2, \ldots, r$, any subset of k of the elements $a_1, a_2, \ldots, a_r$ are incident with at least k distinct elements of $b_1, b_2, \ldots, b_m$; for $p = 1, 2, \ldots, s$, any p of the elements $b_1, b_2, \ldots, b_m$ are incident with at least p distinct elements of the set $a_1, a_2, \ldots, a_n$. The proof is completely graphical.

This result generalizes the Frobenius-König-Hall marriage problem and also improves recent results of Mann, Ryser, Hoffman, and Kuhn. Most of the applications of the marriage problem can be generalized to stronger results as a result of our theorem.

7. A Study of the Hydrolysis of the Sulphate Ester in Unstabilized Cellulose Nitrate. By Paul E. Gagnon, F.R.S.C., Karl F. Keirstead, and Brian T. Newbold.

A series of cellulose nitrates were prepared from cotton linters and wood cellulose, using various mixtures of nitric acid and sulphuric acid. The hydrolysis of the acid sulphate ester of unstabilized cellulose nitrate in water-acetone solution at 25° C. was studied. Hydrolysis was observed over the water content range 0.5 to 2 per cent, but there was almost no hydrolysis in 88 per cent acetone.

8. The Radiation Decomposition of Simple Organic Halogen Compounds in Aqueous Solution. By R. J. Woods and J. W. T. Spinks, F.R.S.C.

A number of halogen-substituted acetic acids, acetaldehydes, and ethanols have been irradiated in aqueous solution with Co^{60} gamma rays and the yields of acid compared under standard conditions.

The products formed on irradiation of aqueous bromal (tribromoacetaldehyde) have been identified. The chain decomposition of this compound is discussed.

9. Analyse Thermique du Système Ternaire $H_2O - H_2O_2 - NH_3$. Par Paul A. Giguère, M.S.R.C., et D. Chin.

On a étudié par la méthode d'analyse thermique l'équilibre des phases condensées dans le système à trois composants : eau, peroxyde d'hydrogène, ammoniac. En particulier, on a mesuré le point de fusion de divers mélanges de l'hydrate $H_2O_2 \cdot 2H_2O$ avec des quantités croissantes d'ammoniac. On a ainsi trouvé deux composés ternaires, l'un de formule $NH_3 \cdot 3H_2O_2 \cdot 6H_2O$, fondant à $-28.9°C.$, et l'autre, $2NH_3 \cdot H_2O_2 \cdot 2H_2O$, fondant avec décomposition à environ 15°C. Deux eutectiques ternaires existent, le premier à 0.7 pour cent NH_3 et $-54.3°$ et le second à 12.4 pour cent NH_3 et $-33.4°$.

10. A Study of the Reaction of Thionyl Chloride, Ammonia and Urea. By P. E. Gagnon, F.R.S.C., J. L. Boivin and J. H. Dickson.

A study of the synthesis of guanidine from thionyl chloride, ammonia and urea has been made. Special attention has been given to the mechanism of the reactions. Ammonium sulphamate was found to be an intermediate.

11. Restricted Desargues' Theorems in Affine and Projective Planes. By N. S. Mendelsohn, F.R.S.C.

Various weakened forms of Desargues' Theorem are discussed with regard to their interdependence. The results are used to establish the non-existence of correlations in pure Veblen-Weddenburn Planes.

12. The Computation of Complex Eigenvalues of Real Matrices. By N. S. Mendelsohn, F.R.S.C.

An iterative process is developed which yields the complex eigenvalues of a real matrix. Methods of increasing rates of convergence are obtained when the iterations converge too slowly. The results are applied to the determination of the roots of a real polynomial.

Thursday, June 13

9.00 A.M.—Business Meeting of Section.

SECTION IV. GEOLOGICAL SCIENCES

Monday, June 10

11.00 A.M.—Meeting of the Section.

1. Presidential Address. By H. C. Gunning, F.R.S.C.

2.00 P.M.—Symposium with other Sections.

Tuesday, June 11

9.00 A.M.—Symposium on "Hydrology."

2. Water Conservation Studies on the Eastern Slopes of the Rocky Mountains. By Howard Kennedy. Presented by J. T. Wilson, F.R.S.C.

Reference will be made to the Acts of Parliament which have given corporate life to the Eastern Rockies Forest Conservation Board, the reason for the Board's formation, and its terms of reference as applied to water conservation. The Board's approach to the problem will be explained with the studies and surveys it has undertaken. The progress of these researches to date, the tentative conclusions drawn from them, and the future possibilities will be dealt with.

3. Ground Water Studies in the United States of America. By A. N. Sayre. Presented by J. M. Harrison, F.R.S.C.

The investigation of ground water as performed by the United States Geological Survey, largely in co-operation with State agencies, includes three phases. In different investigations these are mixed in infinite variation, according to the needs of the investigation and to the personnel available.

The first phase and the one that consumes the largest part of our energies includes the areal investigations. These are systematic studies designed to locate and appraise the ground-water supplies of the nation, area by area, to determine the quantity and chemical quality of the water and its replenishment, movement, and discharge through springs or wells.

The second phase is research into the physical laws governing the occurrence and movement of ground water in relation to such subjects as replenishment of the aquifers by natural or artificial means, causes of land subsidence, nature of intrusion of salty water into freshwater aquifers, and conservation and development of groundwater resources.

The third phase is the maintenance of a current record of the status of the groundwater resources by measuring water levels and artesian pressures in wells.

The Survey is authorized also to locate and appraise water supplies for other Federal agencies, but it does not do so for private individuals, industries, or municipalities, although it is authorized to co-operate with municipalities in investigations in which the municipalities' interest is in water for public supply; nevertheless the Survey's interest is in the availability of water for any and all uses. Some of the State organizations are authorized to make specific studies to meet private and municipal needs. A growing body of trained consultants also is available for this purpose.

The paper discusses the methods and organization by which these activities are carried out, and the development of this programme during the history of the U.S. Geological Survey.

4. Hydrometeorology and its Applications in Ontario. By J. P. Bruce. Presented by R. F. Legget, F.R.S.C.

In recent years, an increasing awareness has developed of the contributions meteorology can make to the understanding of hydrological problems. The resulting branch of applied meteorology, known as hydro-meteorology, is concerned mainly with two general problems. These are (1) providing estimates of future storm and flood magnitudes and their probabilities of occurrence as design criteria for river structures, and (2) developing techniques for and operating river forecasting and flood warning systems. Techniques used in solving these problems are outlined, and examples given of application of the methods to Ontario rivers.

5. The Measurement and Application of Surface Run-Off Data. By J. D. McLeod and R. H. Clarke. Presented by J. F. Caley, F.R.S.C.

A continuous long-term record of run-off from any river basin is basic to the planning of an efficient and economic development of the water resources of that basin. The authors outline the history of the organization which has been responsible for the accumulation of surface run-off data in Canada, and some of the problems encountered in the collection and compilation of these data, particularly the effects which the increased utilization of our water resources has had on the organization and planning for the inventory of these resources. Discussed also are some of the problems associated with the distribution and occurrence of precipitation and run-off in Canada and the adequacy of the available data that beset the hydrologist in planning water resource development.

6. Status of Ground-Water Studies in Canada. By K. Pollitt. Presented by J. F. Caley, F.R.S.C.

Ground-water studies in Canada were initiated by the Geological Survey of Canada in 1903. Investigations during the first thirty years were confined almost solely to the provinces of Manitoba, Saskatchewan, and Alberta. More recent surveys have embraced nearly every province in Canada.

The provinces of Alberta, British Columbia, Ontario, and Quebec carry on ground-water studies which are independent of federal programs. Ontario was the first to enter the field in 1945.

Ground-water studies are a necessity for a full understanding of the hydrology of Canada and so are essential in the planning of settlement and industry in our country.

2–5 P.M.—Symposium with other Sections.

Wednesday, June 12

9.00 A.M.—

7. Unusual Pleistocene Fossils from Southeastern Ontario. By Frances J. E. Wagner. Presented by Alice E. Wilson, F.R.S.C.

Two unusual Pleistocene fossils were found in the Winchester-Cornwall area, Ontario, in the summer of 1956 in excavations resulting from St. Lawrence Seaway and Power Project operations. These are fossil pearls from *Mytilus edulis* from near Winchester, and glochidia (larvae) of a freshwater mussel from a bog deposit in the vicinity of Moulinette. Both are apparently first records. The marine-freshwater sequence in the Moulinette bog is also of interest.

Section IV

8. Bute Inlet Wax. By M. Y. Williams, F.R.S.C.

Large quantities of wax of jelly-like consistency form in Bute Inlet, B.C., and nearby waters, during winters of minimum temperature for the region. The wax disappears in the water as soon as the temperature rises.

The Pacific Fisheries Experimental Station has shown that the wax is of vegetable origin with a carbon 14 dating of zero ± 300 years.

This wax has not been reported from any other locality, and it is suggestive that this is the only place on the coast where Lodge Pole Pine (Pinus contorta) pollen occurs in large quantity on the water (in May and June).

9. The Deposition of Gypsum and Anhydrite. By G. Vibert Douglas, F.R.S.C., and Nordau R. Goodman.

The evaporites, gypsum and anhydrite, present a problem. Some deposits are predominantly gypsum, in some anhydrite is the chief constituent, while in others there is both gypsum and anhydrite. This paper considers some of the controlling physical and chemical conditions in a lagoon and how they point towards a solution of the problems.

10. Induced Radiation Analysis of Igneous Rocks. By G. M. Brownell, F.R.S.C., K. Bramadat, R. A. Knutson, and A. C. Turnock.

Quantitative analysis of silicon, aluminum and sodium in rocks can be determined by the activation of these constituents with negligible interference from other elements. Samples weighing 300 grams of coarsely crushed rock exposed to fast neutrons for eight minutes give off gamma radiation proportional to the silicon content; and upon exposure to slow neutrons the same sample yields gamma radiation which is proportional to the aluminum content. This gamma radiation is measured in a scintillation counter. Rock samples of known composition are used as standards for comparison. Sodium can likewise be activated by longer periods of slow neutron bombardment.

11. Biochemical Prospecting for Cobalt. By Harry V. Warren, F.R.S.C., and Robert E. Delavault.

The cobalt content of trees and shrubs growing above cobalt ore is high enough to be estimated by a relatively simple laboratory method on samples one gram in weight.

Most positive samples contain from one to three p.p.m. of cobalt in dry plant and from fifty to three hundred in ash. This appears to be from ten to one hundred times the amount encountered in vegetation from non-mineralized areas.

12. Report of Progress of the Committee on Precambrian and Related Dating. By R. M. Farquhar. Presented by J. B. Mawdsley, F.R.S.C.

2.00 P.M.—Symposium with other Sections.

Thursday, June 13

11.00 A.M.—General Meeting of the Society.

Seventy-fifth Anniversary Meeting
Symposium

OUR DEBT TO THE FUTURE

Monday, June 10th

2.00 P.M.

THE ROLES OF THE SCIENTIST AND SCHOLAR IN CANADA'S FUTURE

Chairman

The President of the Royal Society of Canada, W. A. MACKINTOSH (Section II), Vice-Chancellor and Principal of Queen's University

Speaker

D. L. THOMSON (Section V), Vice-Principal, Gilman Cheney Professor of Biochemistry, and Dean of the Faculty of Graduate Studies, McGill University

As more attention and study are given to Canada's future, the focus shifts from conjecture about material wealth to appraisal of human resources. In this session, which is an introduction to all the others, Dr. Thomson will examine the roles which scientist and scholar have to play in the future of a country which has proved as difficult technically to develop as it has been difficult politically to govern.

3.00 P.M.

THE PENALTIES OF IGNORANCE OF MAN'S BIOLOGICAL DEPENDENCE

Chairman

E. G. D. MURRAY (Section V), formerly Professor of Bacteriology and of Immunology and Chairman of the Department, McGill University

Panel

K. W. NEATBY (Section V), Director of the Science Service, Department of Agriculture, Ottawa

IAN MCT. COWAN (Section V), Head of the Department of Zoology, University of British Columbia

G. H. ETTINGER (Section V), Dean of the Faculty of Medicine, Queen's University

R. H. F. MANSKE (Section III), Director of Research, Dominion Rubber Company, Guelph, Ont.

Discussion will centre on the interdependence of living things; their power of adaptation through genetic variation; essential contributors to human life and potential agents of destruction; problems of biological control; the importance of greater scientific effort, better public understanding, and resistance to political expediency in matters affecting man's environment.

Tuesday, June 11th

2.00 P.M.

THE SOCIAL IMPACT OF MODERN TECHNOLOGY

Chairman

N. A. M. MacKenzie (Section II), President, University of British Columbia

Panel

J.-C. Falardeau (Section I), Faculté des Sciences Sociales, Université Laval
V. W. Bladen (Section II), Professor and Chairman, Department of Political Economy, University of Toronto
E. W. R. Steacie (Section III), President of the National Research Council

Discussion will centre on: the effect of past technological developments on community life and organization; the effect of social thinking on technological developments; possible future changes arising from new tools, techniques, and social outlook.

3.30 P.M.

OUR ECONOMIC POTENTIAL IN THE LIGHT OF SCIENCE

Chairman

H. C. Gunning (Section IV), Dean of Applied Science; Head of the Department of Geology & Geography, University of British Columbia

Panel

J. E. Hawley (Section IV), Miller Memorial Research Professor and Chairman, Graduate Studies, Department of Geological Sciences, Queen's University
B. S. Keirstead (Section II), Professor of Political Economy, University of Toronto
M. Lamontagne (Section I), Conseiller économique du Conseil Privé, Ottawa
L. M. Pidgeon (Section III), Head of the Department of Metallurgical Engineering, University of Toronto

Topics for discussion will include: non-renewable resources—energy sources, metals, and industrial minerals; conservation and replacement; the trend towards increased use of metals (in addition to iron), which are abundant in the earth's crust but require large amounts of energy to produce; the economics of resource conservation and economic factors in technological progress.

Wednesday, June 12th

2.00 P.M.

HUMAN VALUES AND THE EVOLUTION OF SOCIETY

Chairman

G.-H. Lévesque, o.p. (Section I), Rector, Montmorency House, Québec

Panel

R. Daniells (Section II), Chairman of the Department of English, University of British Columbia
T. W. M. Cameron (Section V), Professor and Chairman, Department of Parasitology, McGill University; Director, Institute of Parasitology, Macdonald College

R. Elie (Section I), Directeur des services de presse et d'information (français) à Radio-Canada, Montréal

A. S. P. Woodhouse (Section II), Professor and Head, Department of English, University College, University of Toronto

The panel will discuss how biology and humanism may supplement each other in conserving the best of the past in a changing world and in promoting new cultural achievements.

3.30 P.M.

LET US LOOK TO OUR HUMAN RESOURCES

Chairman

F. H. Underhill (Section II), Curator, Laurier House, Ottawa

Panel

J. K. W. Ferguson (Section V), Director of the Connaught Medical Research Laboratories, University of Toronto

L.-P. Dugal (Section V), Chairman of the Department of Biology, University of Ottawa

G. V. Ferguson (Section II), Editor, Montreal *Star*

W. B. Lewis (Section III), Vice-President, Research and Development, Atomic Energy of Canada Ltd., Chalk River

Topics: the quality of our national life; the efficient use of manpower; the contribution of education in the schools, in the universities, and at the adult level; the influence of mass media; our philosophy of life.

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